PULP & PAPER

JANUARY 1957

1957 Predictions page 39

Story of R-W Paper Co. page 46

IP's Wood Handling page 105

new data proves: UREA is excellent for

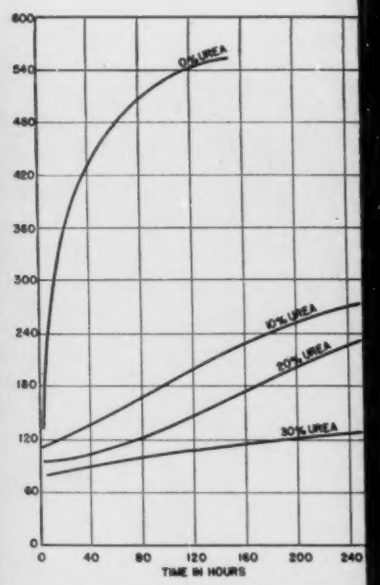
Viscosity Control

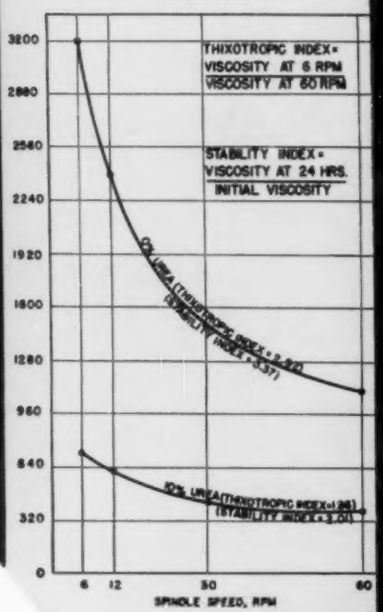
in paper coating

We can show you just how effective UREA is in controlling viscosity of modified starch, casein and Alpha Protein adhesive dispersions—and in reducing thixotropic index too.

The means: actual experimental data in the form of 15 graphs prepared by our research group, and based on field trials. Two graphs are presented on the right.

This data indicates that small amounts of UREA— • give large viscosity reductions, and drastically lower the rate of viscosity increase on standing • lower thixotropic index • permit use of adhesive dispersions with higher solids content.




THIXOTROPIC INDEX = VISCOSITY AT 6 RPM / VISCOSITY AT 60 RPM
STABILITY INDEX = VISCOSITY AT 24 HRS. / INITIAL VISCOSITY
SPINDLE SPEED, RPM
BROOKFIELD VISCOSITY IN CENTIPOISES AT 26° C.

Because UREA is readily available, and effective, paper coaters interested in improving operations and lowering costs will want to examine this data in detail. Send for the paper "Viscosity Control of Paper Coating Adhesives with UREA" by Belche and Ellis for the complete story.

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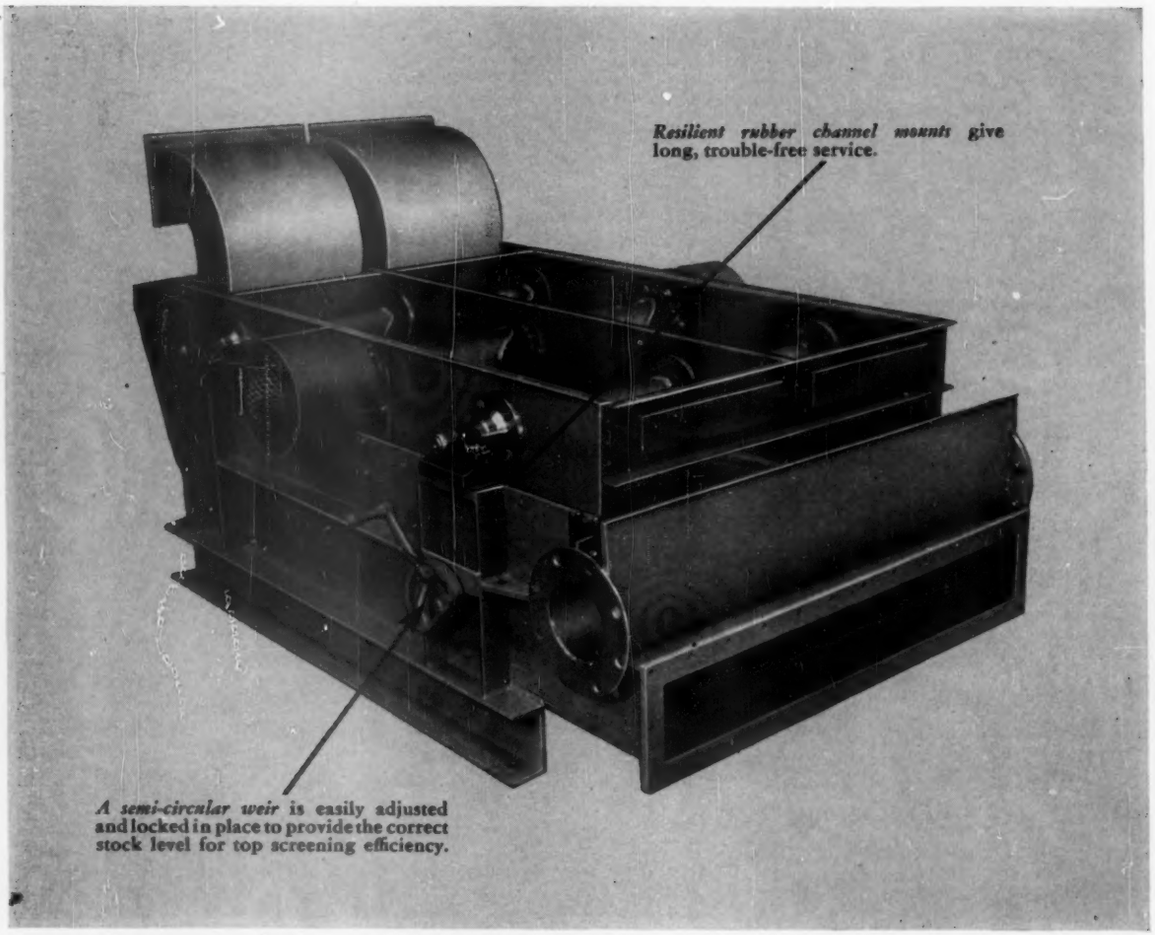
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PULP & PAPER

January 1957

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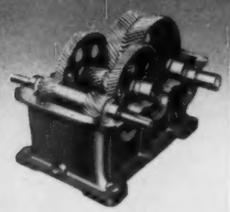

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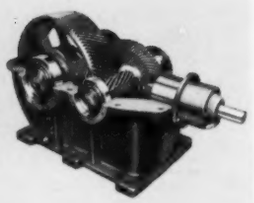

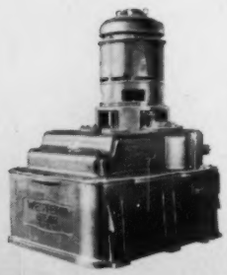

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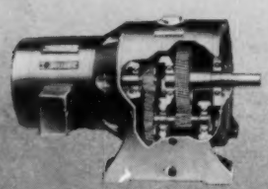

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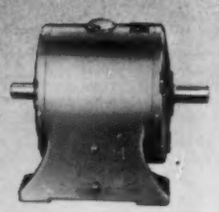

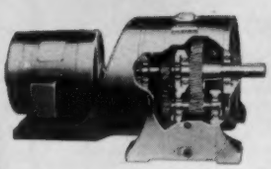

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Christmas 1956

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PULP & PAPER EDITOR READS HIS MAIL

Why Bergstrom Paper Co. Obtained Atomic Energy

Editor's Note—The Atomic Energy Commission recently announced that Bergstrom Paper Co., Neenah, Wis., has been granted access to secret atomic data. Dissemination of the hitherto classified information is part of the AEC's continuing policy, PULP & PAPER learned from government sources. Every month AEC allows certain firms permission to use secret data so they may relate atomic energy to their business.

—Neenah, Wis.

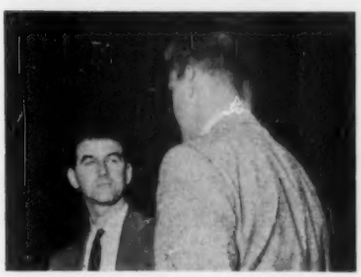
Editor: We presently have no plans for application of atomic energy in our operation.

The grant of access to atomic energy data was sought for the purpose of facilitating any inquiries that might arise in this field.

We read with interest the report on "Nuclear Power for Mills in Ten Years?" (in PULP & PAPER, Nov. 1956, issue, page 61). However, our power situation at this time does not indicate a planned application of atomic energy in this direction.

We simply hope to keep abreast with developments in the field.

H. R. MOORE
Vice President
Bergstrom Paper Co.



NUCLEAR ENERGY POSSIBILITIES in pulp and paper mills are discussed by JOHN W. LANDIS (left) of Babcock & Wilcox Atomic Energy Division, and JOHN R. (RAY) CURTIS, Scott Paper Co. Mr. Landis says the container plant for a reactor installation, big enough to serve a large pulp and paper mill, would only have to be about 18 ft. high. This compares with present pulp and paper steam plants which are up to 20 stories high. The AEC, he said, would approve nuclear power for a plant as close to a city as Union Bag is to Savannah, for example. Several pulp and paper cos. are talking about using nuclear power—it may mean future mills can be built almost anywhere there are trees. (PULP & PAPER Photo).

Our Crossett Story

—Crossett, Ark.

Editor: We all have read the articles covering "The Crossett Story" in your October issue. It was a fine overall job.

WILLIAM C. NORMAN
General Manager
Crossett Industries

—Crossett, Ark.

Editor: I would like to compliment you on the excellent treatment you gave our operation.

J. C. HAIR
Manager
Crossett Paper Mills

—Crossett, Ark.

Editor: All of us at Crossett liked the handling of "The Crossett Story." It was exceptionally well done.

R. P. MEREDITH
Personnel Director
Crossett Paper Mills.

"Best in Its Field"

—Savannah, Ga.

Editor: PULP & PAPER is an excellent publication and by far the best in its field. We subscribe to PULP & PAPER at the Herty Foundation.

EARL N. GLEATON
Herty Foundation Laboratory.

Year-Around Reference

—Menasha, Wis.

I use the World Review Number as a constant reference until the next year's issue appears.

GEORGE J. BRABENDER
Staff Asst. to Executive
Vice President of Manufacturing
Marathon Corp.

"Proper Place" for Genetics

—Great Works, Me.

Editor: I am sure that the article which you published (October issue, p. 120) entitled "Foresters Hold Tree Marking 'Battle'," reporting the Northeastern Forest Improvement Conference meeting recently at Armstrong Forest Co. Wolf Run Experimental Forest (near Johnsonburg, Pa.) will do a lot toward having forest genetics attain its proper place in the wood production picture.

It was a swell article and NEFTIC is indebted to you for a nice job.

EDWIN L. GIDDINGS
Superintendent, Penobscot Development Co.

From Canada

Toronto, Canada.

Editor: We would like to take this opportunity of congratulating you on a wonderful publication which certainly keeps us abreast with developments in the industry, both in the United States and Canada. We look forward to receiving each issue.

D. N. GREEY
Greey Mixing Equipment Ltd.

Rates WORLD REVIEW as Tops

Auckland, New Zealand.

Editor: I felt you should know your WORLD REVIEW NUMBER is an important one to this company. In it we find figures unobtainable in any other journal. Your editorial staff makes a fine job of this issue. We will want two copies every year hereafter.

CHRISTINE WYNNE, Librarian,
New Zealand Forest Products Ltd.

"An Excellent Job"

—Upper Derby, Pa.

Editor: I have read very carefully the October article in the PULPWOOD SECTION on Northeastern Forest Improvement Conference. You have done an excellent job.

ERNST J. SCHREINER
Executive Secy., NEFTIC

WORLD REVIEW Always!

Helsinki,
Finland

Editor: Your WORLD REVIEW NUMBER is of very great interest, always, and especially in these times, when the pulp and paper industries are expanding in almost every country.

JUOKO KOLJONEN
Information Chief, Central Assn.
of Finnish Woodworking
Industries.

HERE'S HOW to address your letter to this department:

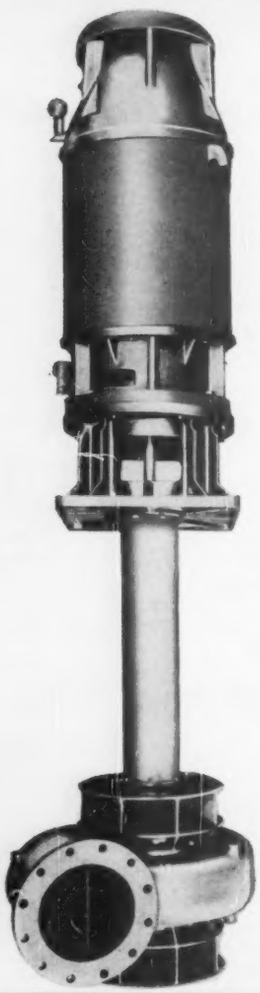
No anonymous letters will be considered but names may be withheld if desired.

The Editor
PULP & PAPER
1791 Howard Street
Chicago 26, Illinois

Bingham

TYPE "VS" DOUBLE SUCTION DOUBLE VOLUTE VERTICAL PUMP

SPECIALLY DESIGNED FOR PULP AND PAPER MILL SERVICE...CANNOT BECOME AIR-BOUND OR CLOGGED



REQUIRES ONLY MINIMUM-SIZE WET PIT

Bingham Type "VS" Pumps are being used as standard equipment throughout the Pulp and Paper Industry for handling stock, white water, water supply, disposal sump and other high capacity, medium head services. The vertical "VS" Pump requires only a shallow sump of minimum dimensions, permitting installations to be made on the same floor with flat screens, deckers, washers, save-alls, etc.

The "VS" Double Suction Pump has large suction openings and specially-designed impellers to handle air-entrained white water or stock without becoming air-bound or clogged.

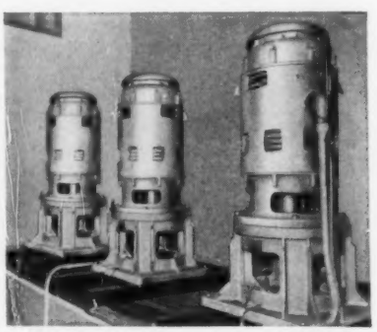
The "Double Volute" design of Bingham VS Pumps insures radial balance of the rotating element throughout the entire operating range of the pump. This feature prevents wear of rotating parts due to the elimination of shaft deflection usually caused by "SIDE PUSH".

The "Double Suction" feature of this pump eliminates axial hydraulic thrust thereby permitting the use of standard vertical motors.

For complete information call your nearest Bingham office, or write for brochure 110.

Outstanding features of the Bingham "VS" Pump:

1. Will not become air-bound.
2. Will handle stock without clogging.
3. May be installed at convenient locations in mill flow line.
4. Operates successfully in basements or on any floor level.
5. Eliminates need for secondary dump chests.
6. Substantially reduces building costs.



Battery of Bingham Type VS, "Double Volute", Double Suction, Wet Pit Pumps handling 36 million gallons of white water per day from flat screens located on the same floor level in a large West Coast pulp mill.

Bingham SINCE 1921

DOUBLE VOLUTE PUMPS RADIAL BALANCE

BINGHAM PUMP COMPANY

General Offices: **2800 N.W. Front Avenue, Portland 10, Oregon**

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NEWS FROM 'ROUND THE WORLD

More Newsprint for Pakistan

Pakistan

High on the priority list is that universally precious product, newsprint. Newsprint scarcity is critical in the country—one of its major newspapers, New Nation, in Dacca, ceased publication in April. Mohamad Ali, Pakistan prime minister, has announced that the newsprint industry will be stepped up as soon as possible. In Pakistan's constitution, freedom of expression is a fundamental right and the country is now trying its best to insure that this freedom will be guaranteed. It is also interesting to note that the government is stepping up telecommunication services and is also offering a government subsidy of 200,000 rupees ($42,000) for airmail delivery service of newspapers between East and West Pakistan—some 1,000 miles apart.

Bolstered by aid from the U.S. and the Colombo Plan (a cooperative program sponsored by Australia, New Zealand, Canada and Britain), Pakistan now has a nest egg of $375 million in foreign aid plus machinery and equipment from its foreign aid friends. Much of this aid is now going to the paper industry.

It is also clear that more interest shall be given to reforestation, specially of long fibered softwood. In the hardwood line, the eucalyptus seems to be the wood of the near future, although it is possible a more suitable tree could be found.

A BUILDER OF MILLS REPORTS . . . From a builder of mills comes word that small pulp mills are "springing up" in Europe as a result of short world supply and high costs (if North America had not been in the market abroad so heavily, costs might have been higher).

Peter Vakomies, assistant chief engineer of Sandwell & Co., Vancouver, B.C., who recently visited France, Austria and the United Kingdom, where the Sandwell firm is helping build mills, said on the Severn River the first chemical mill in Britain will use homegrown wood—hardwoods from adjacent forest and wastewood from plywood plants. In France, a straw pulp mill near Paris is being converted to a kraft mill using hardwoods and pine. A mill near Vienna is to be built, using a mixture of hard and softwoods from the surrounding area.

I. P. EXPORT GROWTH . . . I. C. Baldwin, president of American Paper Exports, Inc., 220 East 42nd, New York City announces election of W. D. Hurlbut and J. R. Sherman as vice presidents.

American Paper Exports is the export division of International Paper Co.

Mr. Hurlbut joined Riordon Sales Corp. Ltd., affiliate of International at Montreal in 1952. Two years later he moved to New York with that organization. Mr. Sherman joined American Paper Exports at New York in 1940.

APPOINT U. S. SALES AGENTS . . . Jagenberg-Werke of West Germany, a 50-year-old paper converting machinery builder, has appointed Potdevin International Ltd., Teterboro, N. J., as exclusive U. S. sales agent. "Jagenberg machines will complement the wide line of converting machinery built by Potdevin," says J. Henry Richmond, president of Potdevin.

MORE PAPER USE IN EAST GERMANY . . . East Germany's paper industry is expected to be expanded under the present Five-Year Plan (1956-1960) to provide for a rise in annual per capita consumption from 79.2 lbs. to 103.4 lbs.

WHAT A RUSSIAN PAPER MAGAZINE SAYS . . . Here are some interesting excerpts from a Russian paper industry journal: Compared to pre-war 1940, in 1954 the paper industry as a whole produced 2.3 times more paper, 4.9 times more board, 3.2 times more dissolving pulp and 1.9 times more woodpulp.

This one estimate places paper production in 1940 at 893,200 short tons and board at 139,700 tons; vs. 2,054,300 tons of paper in 1954 and 684,200 tons of board in 1954. This indicates substantial progress, especially in view of the war devastation suffered—reported to be 40 paper mills destroyed by the Germans with capacity of 330,000 short tons.

An inefficient capital construction program is blamed as one reason for the paper industry's shortcomings. Much new highly productive and expensive equipment is reported to be awaiting installation at mills. Examples: Two machines with a combined capacity of 44,000 tons of lightweight papers, delivered two years ago, have not yet been installed. A parchment paper machine with a 2,420 ton capacity, delivered five years ago, is still waiting to be installed.

The business publication hits hard at the "backwardness of the paper machine builders" and demands certain specifications of Russian machine and instrument builders. One such demand is for newsprint machines about 264 in. wide with speeds around 2,000 fpm. (U.S. paper machine builders take note.)

EXPORT SALES EXEC. . . . Paul J. Wolfert has been appointed supervisor of export sales for Blaw-Knox Co., Pittsburgh, Pa., U.S.A. Mr. Wolfert has been with Blaw Knox for 16 years, the last eleven with the company's Export Department. H. T. Schwier, formerly in charge of Blaw-Knox exports, has resigned and will represent Blaw-Knox in the foreign sales of rolls and rolling machinery, including steel plant equipment. Mr. Schwier had served in the Blaw-Knox Export Department since 1928.

SWEDEN PROTESTS FRENCH LEVY . . . Sweden has made serious representations to the French Government concerning the provisional French import levy on paper, according to reports in Stockholm. It is maintained that on the French side it was foreshadowed, during the Swedish-French trade negotiations in March, that this 7% duty would be abolished in April. This promise has not been fulfilled, the Swedes complain.

Less Finnish Exports Promised Russians

Paper and pulp exports from Finland to Russia are reduced under a new 1956 to 1960 agreement.

For those 5 years, exports to the USSR are estimated at 34,100 million marks for 1956, 34,400 million for 1957, 36,400 million for 1958, 37,000 million for 1959 and 37,800 million for 1960 . . . The share of paper and wood products will somewhat diminish and be about 33.4%. (Ed. note: According to other sources the previous agreement covering 1952-5 provided 30,000 tons of newsprint for the 3-year period.

THE SUTHERLAND GROUP

SUTHERLAND REFINER CORP., TRENTON, NEW JERSEY
SUTHERLAND INCORPORATED, TRENTON, NEW JERSEY
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Sutherland leadership offers integrated systems for increased efficiency, lower operating cost, reduced power requirements.

SIMULTANEOUS BEATING AND REFINING replaces the use of beaters for beating and conicals for refining. This simultaneous system has been in use for twenty years on all kinds of pulp and board and paper including white papers made of various furnishes.

PRESSURE WASHING SYSTEM squeezes the liquor from the fibers and in doing so twists the fibers, thus increasing the felting power of the pulp and, therefore, the strength of boards and papers made from the same. The recovery of salt cake is excellent and the system has distinct advantages over other methods of washing. Another advantage lies in controlled water consumption and consequently effluent to the stream. In some cases pollution of the stream, into which the final discharge is made, is lowered so that the stream B.O.D. can pass State authority.

CONTINUOUS DEFIBERING SYSTEM for broke, cooked chips, waste paper cooked hard or soft, wood, or straw. The Sutherland Breaker Trap is the only equipment designed specifically to separate bundles of fibers. The Breaker Trap removes tramp metal and so protects both itself and subsequent equipment. It leaves intact other waste materials like cellophane, dirt particles, polyethylene, foil, rubber bands, wood slivers, etc., so that they may be removed by standard screening methods. The Sutherland Breaker Trap offers increased yield of usable fibers, decreases screen loss, improves washing efficiency, reduces power needs.

SUTHERLAND HIGH YIELD PROCESS increases the yield of acceptable pulp by 20%, thus effecting a tremendous saving in wood, while at the same time maintaining quality standards. This system is now employed by four major mills and has been operating successfully for over five years.

Further information is available upon request.

NEWS OF THIS "GROWTH INDUSTRY"

New Paper Products Are Signs of Growth . . . A stretchable paper is being developed by West Virginia Pulp and Paper and Cluett Peabody Co. A reinforced waterproof paper to wrap up your boat for winter, also for curing concrete, temporary silos, etc., is being worked on by Union Bag-Camp Mfg. U.S. Marines are trying out paperboard temporary shelters for aircraft. Paper sleeping bags, ponchos, furniture and socks—these are U.S. Army developments.

Twice as Big Super Marts in Five Years . . . And the biggest expansion in the next five and ten years will be in supermarkets for non-food lines. These predictions are big news for pulp, paper and board, made by William D. Hall, director of research, Folding Paper Box Association. Average supermarket has 17,500 sq. ft. now. In five years, they will average 50,000 sq. ft., he said.

Southland to Add Number Four . . . A new 240-in. trim Pusey & Jones Fourdrinier machine designed for 2,000 fpm has been ordered by Southland Paper Mills, Inc., for delivery in the fall of 1958. New machine will turn out about 300 tons a day and boost annual production to 300,000 tons at the newsprint mill.

Over-Production Will Be Absorbed . . . William L. Keady, president of Fibreboard Paper Products Corp., (Fibreboard-Pabco merger), says there is some overproduction in paper products but it will be absorbed in a year or so. "The upward cost currents make potential price cutters pause," he said. Hardware and men's and women's clothing show promise for future self-service stores, he said.

A Peek Into the Future . . . with Dr. Lincoln R. Thiesmeyer, president, Pulp and Paper Research Institute of Canada: Chips blown through plastic pipelines to trucks and cars or into large plastic or rubber bags to float downriver; cheap atom power; completely automatic portable pulp mills in the woods; cooking pulp by radar or high frequency heating; reading wood moisture with a meter; logging with a helicopter which grips trees at ground level and cuts off at stumps.

Powell River to Build First Mill in East Oregon . . . The British Columbia firm has acquired control of Brooks-Scanlon, Inc., lumber firm, Bend, Ore., will build a pulp mill to use wood wastes and stabilize forest economy in area. Sandwell & Co. are engineers. John M. Hollern is pres., Freeman Schultz, gen. mgr., of Bend operations.

New Success in Separating Chips and Bark? . . . If true, reports that Battelle Institute, Cleveland, has devised a new flotation system for separating chips from bark may be revolutionary. It would mean all portable operations or sawmills need are chippers, the separation would be done in a plant at the mill. U. of Washington forestry dept. also recently developed a flotation separation technique for alder, reported in PULP & PAPER.

Weyerhaeuser Will Use Continuous Digester . . . A 100-ton Kamyr unit for standard grades of pulp cooking by continuous method will go in the Weyerhaeuser mill. St. Regis soon starts up two 200 ton units at Hinton, Alta. International Paper has been operating a 100-ton unit at Camden, Ark., first in North America. Gulf States Paper Corp.'s new Demopolis, Ala., mill will have the biggest in world—300 tons (see story in this issue).

Expansion by Kimberly-Clark Corp. . . . Kimberly-Clark's Mexican subsidiary, "La Aurora" Paper Co., with two mills near Mexico City, started up a new creped wadding machine in November to serve rapidly expanding market south of border. K-C has management contract to operate new woodpulp mill at Chihuahua, which was built by Italian engineering firm with Mexican government support. K-C is building another tissue mill at New Milford, Conn. "Current demands for all our products exceed capacity, presage continued satisfactory progress," says Pres. J. R. Kimberly.

Harbingers of Growth . . . Two unrelated news events: Chicago Tribune printed the largest weekday paper in its history on Thanksgiving Day—144 pages. It used 875 tons of newsprint for that one issue. And—America's steel industry will have to expand ingot production by 50% in next 15 years to keep pace with general economic growth, says A. B. Homer, president of Bethlehem Steel Co.

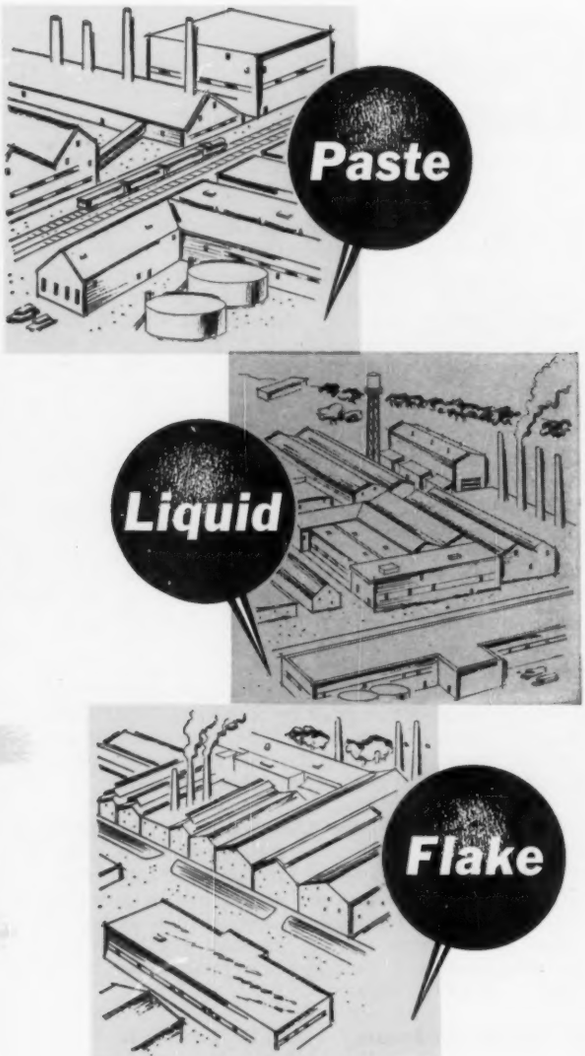
New York & Penn Installs New Machine . . . Work on installation of 108-in. Beloit Fourdrinier, to replace an 80-in. cylinder, begins at its Lock Haven, Pa., mill. First paper will be made early in 1957.

Several Mills Studying Nuclear Power . . . This is confirmed by PULP & PAPER inquiries. It may change concepts on where mills can be located. Trees, but not usual power resources, will be future determining factor, says one mill exec. Mills also expect lower costs when local power plants convert to nuclear power.

Packaging Grows to $12 Billion Industry . . . And it is still in its infancy, says W. W. Cassidy of Central Fibre Products Co. Advertising was estimated at $9 billion, three-quarters as large as packaging. All appliances are rated at $7 billion and all electrical power used in U.S. at $8 billion.

Shipping Container Plants for Mead . . . Mead Corp. will acquire shipping container plants in Cincinnati and Durham, N.C. with acquisition of Jackson Box Co. as a wholly owned subsidiary. In 1955 Mead Corp. purchased 48.7% of common stock, now acquires remaining 51.3% from William J. Cassady, Jr., president. Latter will take over direction of Mead's corrugated box activities. Also acquired: substantial interests in three other box companies—York Container Co., York, Pa.; Container Corp., Milwaukee; and Delavans, Inc., Syracuse, N.Y.

NOPCO HAS THE DEFOAMER THAT WILL GIVE BEST RESULTS FOR EACH MILL



Nopco, the first to make a chemical defoamer for the pulp and paper industries, has an unrivalled wealth of first-hand experience, and the widest range of defoamers...paste, liquid, and flake. One thing we know for sure—there's no such thing as a defoamer that works equally well in *every* mill. Local conditions vary too much.

That's why we prefer to analyze a sample of white water from your mill. We test it with every potentially effective defoamer—including if you like, the one you are now using. When we have finished our exhaustive tests, we are able to determine scientifically and impartially, which defoamer will give your mill the even fiber distribution, fewer breaks, higher machine speeds, and improved sheet formation that you should have.

What you want is the absolute minimum of foam in your operation. If you haven't given Nopco a chance to "prescribe", you can't be sure you have that absolute minimum. Why not consult Nopco Chemical Company, today?

NOPCO

PLANTS: Harrison, N. J.
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NEWS OF THIS "GROWTH INDUSTRY"

More Scientists Needed . . . America will need, within ten years, nearly 100,000 more scientists and engineers than current training trends indicate it will have, says B. F. Goodrich Co. A shortage could be avoided if only 20 or 30 more students out of each 1,000 graduates attain degrees in science and engineering.

Will Start North Carolina Mill in Summer . . . Ground has been broken for new mill for American Forest Products Co. at Newark, Calif., which will make corrugated liner paper out of waste paper for use in cartons.

Expansion at Rome Studied . . . Some $20 million would be spent expanding facilities at the Mead-Inland Container Rome Kraft Co. at Rome, Ga. Said Harry T. Mead, vice pres. of the Mead Corp.: "The mill's capacity will be expanded over the next two or three years if market conditions are favorable." Present capacity is 240,000 tons.

Palatka Newsprint Mill Questionable . . . Plans for the proposed 100,000 ton newsprint mill under consideration by Hudson Pulp & Paper Co. are still very much up in the air. Joseph M. Mazer, Hudson treasurer says "the plan has not been completely dropped at all, but we aren't pushing it either."

New Mississippi Mill Goes Ahead . . . Plans seem to be moving ahead for the proposed $30 million pulp and paper mill six miles north of Columbus, Miss., on the Tombigbee River. The company has applied for permission to construct a water intake plant with a 10 ft. deep channel in front of it along the east bank of the river at the plant site.

Crossett Starting $5 Million Construction . . . By the time you read this, The Crossett Industries will have started a $5 million expansion program to improve chemical recovery, pulp storage and wood handling at the Arkansas mills. Work will be carried out by J. E. Sirrine and include new Combustion Engineering recovery boiler, woodyard flume, lime kiln and pulp storage tank. Other improvements will follow. Completion is expected in 1958.

Union Bag-Camp Still "Considering" Carolina Mill. . . . Despite announcement of plans for improvement and expansion at Camp Mfg. Co. in Franklin, Va., possibility of a new mill in North Carolina has still not been ruled out by the newly merged Union Bag-Camp Paper Corp. It is studying water situation at 4,500 acre site 12 miles from New Bern, N. C., on which it holds option.

Called Back North . . . The joint venture of Howard S. Wright Co. of Seattle and Guy F. Atkinson Co. of Seattle and San Francisco, which as "Ward Cove Builders" constructed Alaska's first pulp plant (Ketchikan Pulp Co.), has been awarded a preliminary contract for construction of the projected Alaska Lumber & Pulp Co. (Japanese) 300-ton high alpha cellulose pulp mill near Sitka.

Three Million for Third Expansion . . . 140 tons per day is the goal of Simpson Paper Co.'s expansion already underway at Everett, Wash. Present capacity of 100 tons per day of book and fine paper will be increased over one-third by rebuilding 150-in. Fourdrinier to permit speeds over 1000 fpm, plus modifications on two smaller machines. Revamping or enlargement of pulp production and power distribution will be effected. Chief Engineer W. A. McKenzie will direct the job.

Justifies New Mill in Manitoba . . . Following an eight-month survey of the forested areas of Manitoba, Arthur D. Little, Inc., U.S. industrial research organization, has reported there is room and economic justification for establishment of a $30,000,000 newsprint mill, a hardboard and insulating board plant, plywood mill and sawmill. At present there is only one mill in Manitoba, the Pine Falls operation of Abitibi's Manitoba Paper Co., currently expanding at a cost of $6,000,000. Report also suggests use of poplar, hitherto neglected by the Canadian industry. Dawson Bay, on Lake Winnipeg, is suggested site.

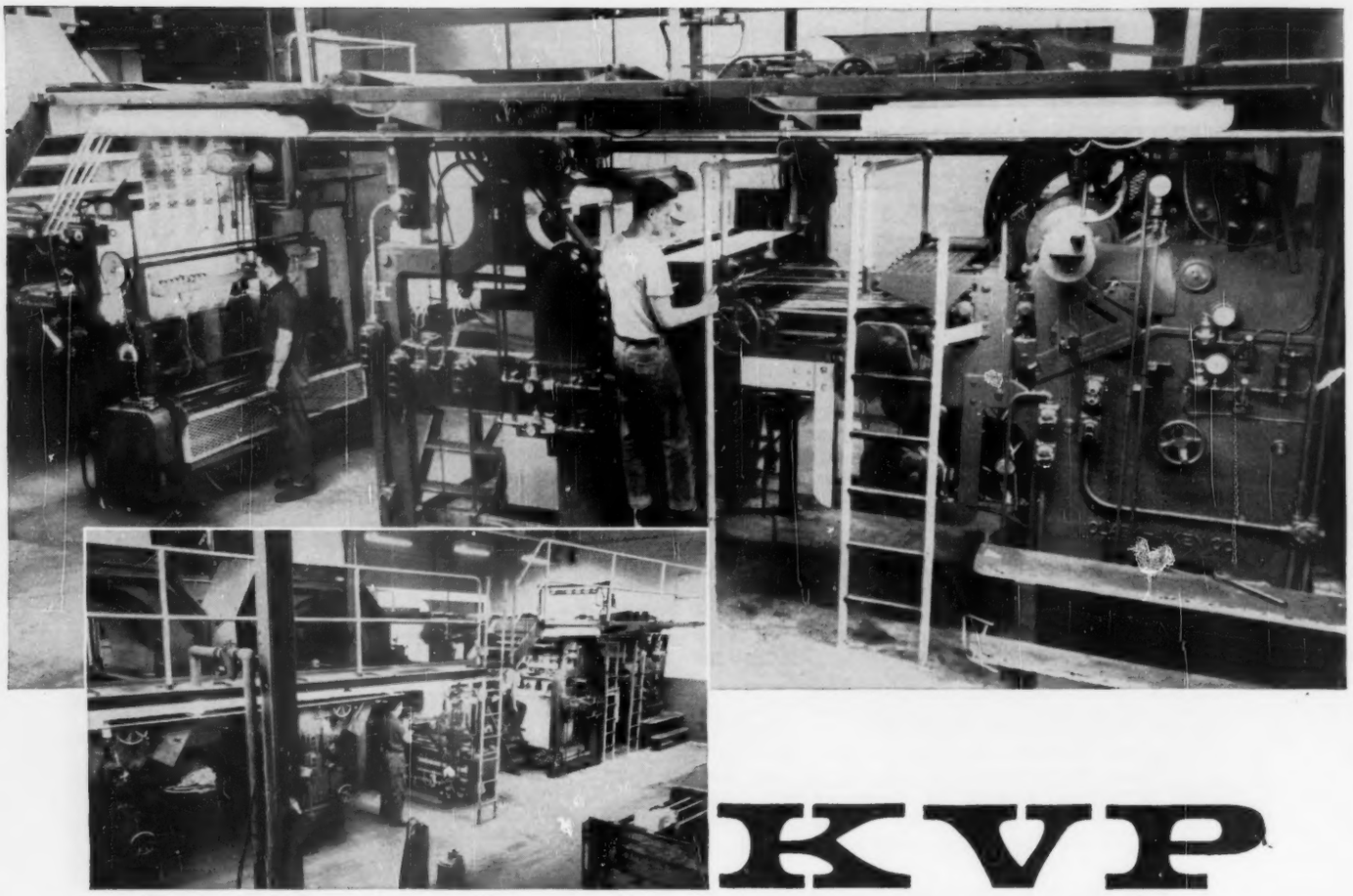
U.S. Woodpulp Is Running 8½% Ahead of Year Ago . . . Consumption including use of imported pulp is 9.3% ahead, establishing new high records for all time, according to figures for eight months in 1956 presented by Puget Sound Pulp & Timber Co. During this period, domestic production of pulp rose to 14,927,000 tons from 13,751,000 for the 1955 period.

CZ Mill Plans . . . Crown Zellerbach Corp. is conducting a survey to determine feasibility of building a 400-ton per day pulp mill in Clatsop County, Ore., to operate on the timber yield from about 100,000 acres of state-owned timber land. Vice Pres. E. P. Stamm, of Portland, reported CZ does not foresee building a mill in the area within five years.

Buys Plastic Plant . . . Portco Corp., Vancouver, Wash., has purchased Simpson Logging Co.'s plastic plant division formerly owned and operated by M&M Wood Working Co. in Portland, Ore. Portco's Vice Pres.-Gen. Mgr. Ralph Meyer said production of the full wood plastic pipe line will be enlarged.

Kaiser Buys Fir-Tex . . . Kaiser Gypsum Co., Inc., subsidiary of Permanente Cement Co., took over Fir-Tex Insulating Board, Inc., St. Helens, Ore., by purchase in November and inaugurated production later the same month. Claude E. Harper, vice pres-gen. mgr. of Kaiser Gypsum, says acquisition should serve as a stimulus to further expansion. New Insulating Board Division of Kaiser Gypsum has annual capacity for 118 million sq. ft. of insulation board (½-in.).

IN THE PARLANCE OF THE INVESTMENT WORLD, "Growth Industry" is a term used to differentiate certain industries from those which, by their very nature, are necessarily static, others that are speculative, etc. It has only been in recent years that most of the investment world has recognized pulp and paper as a genuine "Growth Industry." Its planning is longterm, its markets and uses are basic, they keep increasing, and it is the only major industry based upon a renewable resource—trees. Depressions may come and go—they will never wipe out trees.



KVP

demonstrates the Speed, Precision and Rigidity of Clark-Aiken Sheeters

In 1950, when The KVP Company, decided it would be possible to eliminate rewinding and greatly simplify handling by hooking a sheeter to the delivery end of its big, high-speed No. 10 four-color rotogravure press, selecting the right sheeter imposed a problem for KVP engineers.

It had to be flexible in its operation to permit synchronization with the press.

It had to be accurate to make each cut of the printed sheet right on the line.

It had to be rigid to withstand the strains of continuous high-speed operation and maintain this accuracy.

Based on their experience with Clark-Aiken Sheeters in the KVP finishing room, they decided that a 52" Type C Clark-Aiken Cutter-Layboy Unit would do the job best.

Wisdom of this decision is borne out in the following report from Dellmore Moffett, Superintendent of Printing of The KVP Company.

> *"The Clark-Aiken sheeter at the end of our No. 10 4-color rotogravure press is valuable to us for three things. First, its rigid construction. Second, its speed. Third, and most important, its accuracy. I am tempted to use the word 'unbelievable' ahead of the word 'accuracy' for it far surpasses our original expectation. We are actually able to control it within the width of a period, or small dot."*

In addition, KVP enjoys the benefits of such exclusive Clark-Aiken design features as

- The "Spiral Shear" Cylinder Knife that makes clean, sharp cuts on any type and weight of stock.
- One-Piece Knife Assembly that automatically maintains alignment when squaring the sheet.
- Scale-Setting of Slitters and Joggers that makes possible straight-line travel between slitters and pile without use of tapes.
- Lifetime Tapes which outwear old types many times, practically eliminate stretch troubles.

If you are sheeting paper, pulp, board, film, foil or fabric and require sustained high-speed operation with sustained accuracy and low operating and maintenance costs, Clark-Aiken has a sheeter exactly suited to your needs and can furnish it with a layboy and roll stand exactly suited to your requirements and operating conditions. Clark-Aiken engineers will gladly study your sheeting operations and offer recommendations with actual cost and savings estimates.

THE Clark-Aiken COMPANY

957 SPRINGFIELD ROAD

LEE, MASSACHUSETTS

West Coast Office: 114 East Union Street, Pasadena, Calif.

for paper that "talks" quality use *Clinton*® starches

That's it — rattle it, crease it, check it for uniformity — that's what your customer is going to do. He'll be as satisfied as you, too — when Clinton starches are used for sizing and coating. Clinton's enzyme conversion starches PM 3011 and PM 3021 give your paper the added strength and improved surface required for good printability. They convert well at high solids levels; they give efficient coating from application to drying.

For paper products that speak well of your mill, a good word to know is Clinton. Clinton starches and dextrins.

. . . and remember — *technical service in connection with your specific problems is available without obligation*

Quality products

FROM THE WORLD'S CORN CENTER

CLINTON

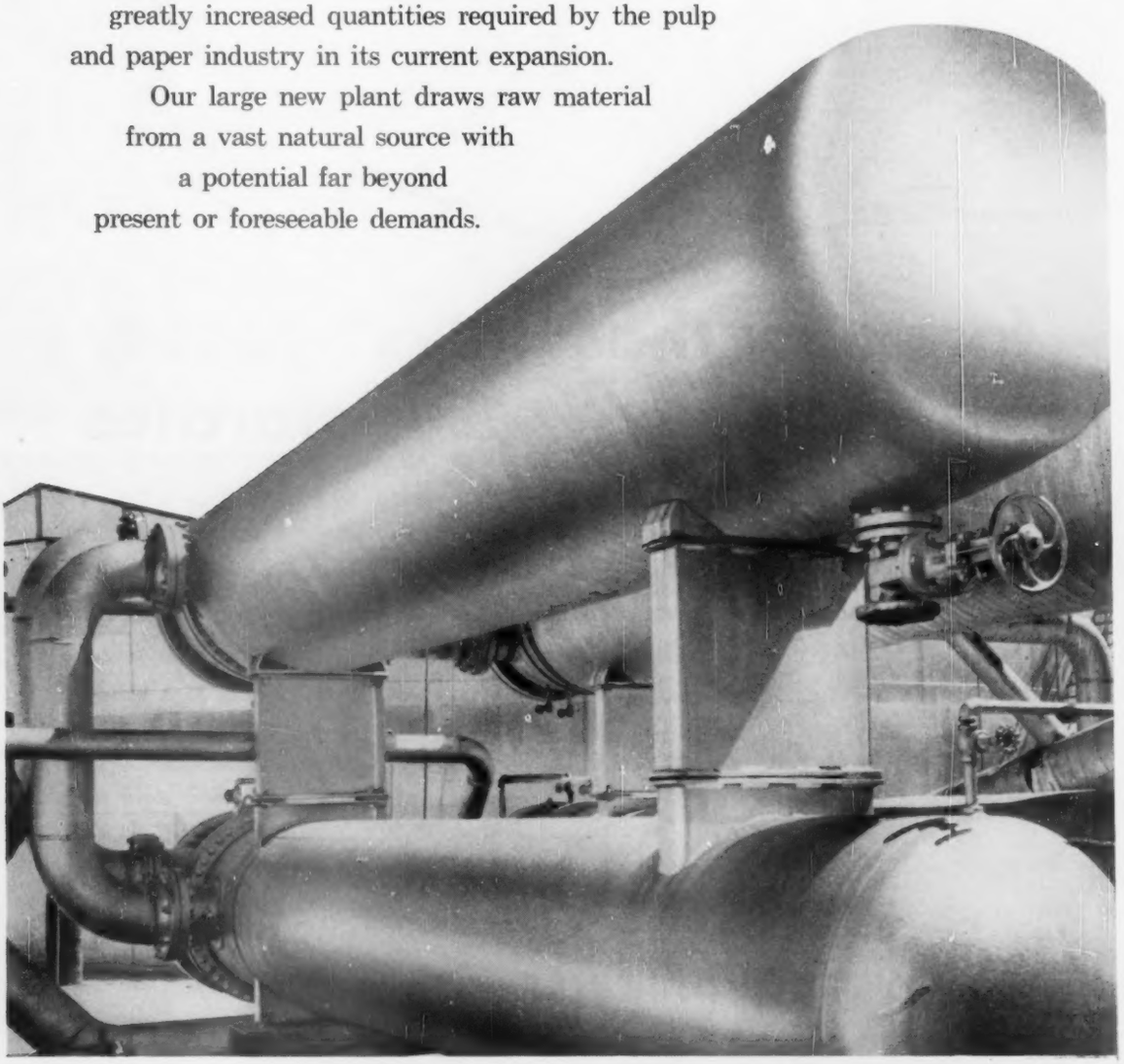
CLINTON CORN PROCESSING COMPANY
CLINTON, IOWA

Our 50th Anniversary Year 1907 - 1957

SALT CAKE is a primary West End product and we have the production capacity to meet your needs

At West End, salt cake is a prime product . . . not a by-product . . . and is being produced in the greatly increased quantities required by the pulp and paper industry in its current expansion.

Our large new plant draws raw material from a vast natural source with a potential far beyond present or foreseeable demands.



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West End Chemical Company

DIVISION OF STAUFFER CHEMICAL COMPANY

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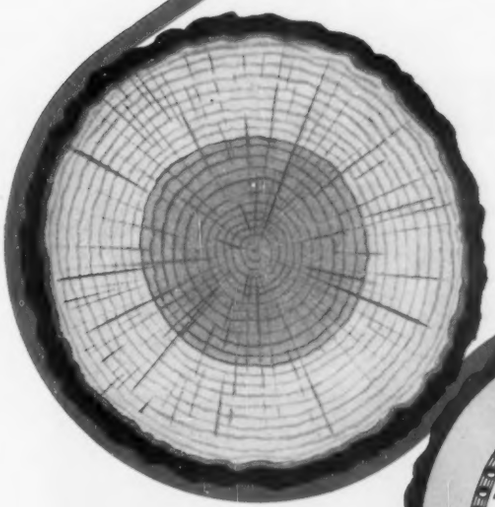
WOOD PULP
PAPER



Offices and representatives
in 60 cities in the United States, Europe,
Latin America, Africa, and Asia

BULKLEY DUNTON
ORGANIZATION
295 MADISON AVENUE, NEW YORK 17, N. Y.

BULKLEY DUNTON & CO., INC. • BULKLEY DUNTON PULP CO., INC. • BULKLEY DUNTON S.A.
BULKLEY DUNTON CELLULOSE EXPORTS, INC. • BULKLEY DUNTON, LTD. • BULKLEY DUNTON A/B
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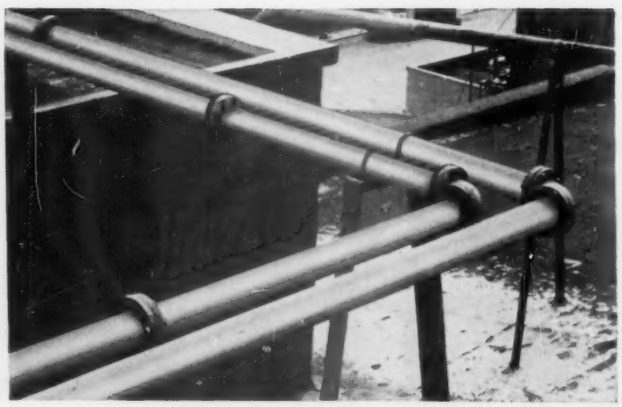
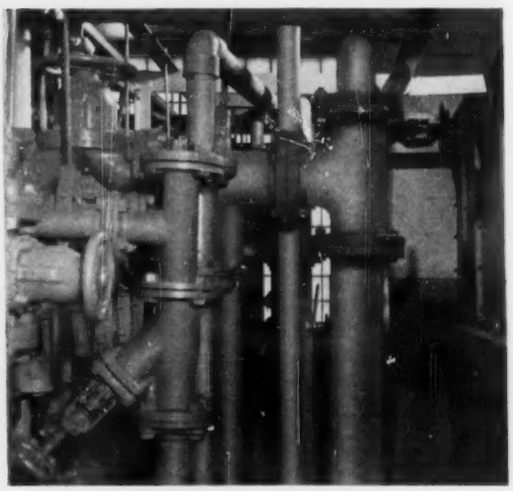
In New England—CARTER RICE STORRS & BEMENT

USCOLITE PIPE

NOT A SIGN OF DETERIORATION



INSTALLED MARCH, 1951, in Crown Zellerbach's paper mill in Camas, Washington, this Uscolite plastic pipe has been carrying calcium hypochlorite bleach liquor 24 hours a day for 6 years—*with no deterioration whatever.* It is subject to outside temperatures from 10 degrees F to 100 F and all weather conditions. Uscolite replaced pipe that gave an average of 6 months' service.



INSTALLED DECEMBER, 1952, in the same plant, these Uscolite pipes and fittings also carry bleach solutions. Uscolite shows no sign of deterioration, whereas previous pipe caked badly and rarely lasted more than 2 years.

INSTALLED IN AUGUST, 1953, these Uscolite pipes, valves and flanges handle mixing of chlorine in the same Crown Zellerbach plant. One line, for example, operates 24 hours a day, 7 days a week—suffers no damage, even though the destructive wet chlorine gas is one of the most corrosive materials handled in the mill.

The complete Uscolite® line—including elbows, tees, flanges, couplings, caps, valves, bushings—is obtainable at any of our 28 District Sales Offices, each staffed with factory-trained engineers, or at selected distributors, or contact us at Rockefeller Center, New York 20, N. Y. In Canada, Dominion Rubber Co., Ltd.

Which Uscolite Pipe best serves your needs?

Uscolite CP: styrene-acrylonitrile-butadiene copolymer; good resistance to strong acids, active chemicals; higher impact strength and operating temperatures.

Uscolite RV: an unplasticized, unmodified polyvinyl chloride; higher resistance to strong oxidizing acids and chemicals; good impact strength.

Mechanical Goods Division

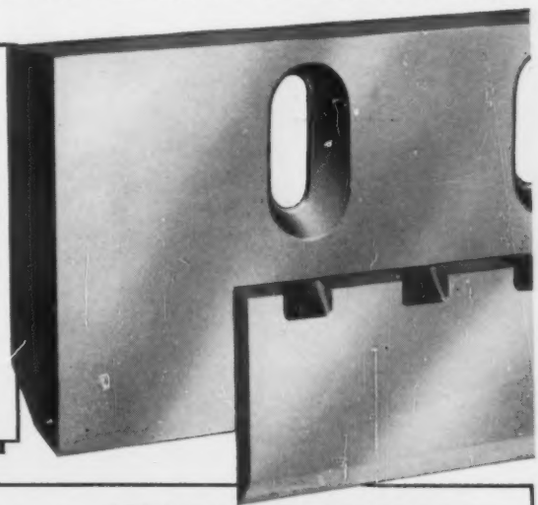
United States Rubber

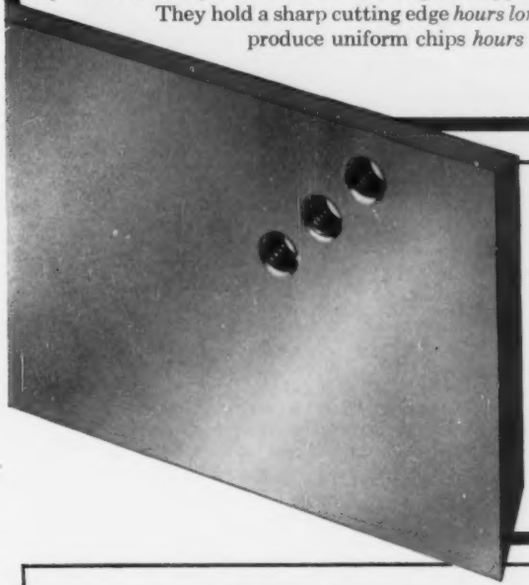
Your Work is Cut Out for You- **DEPENDABLY, QUICKLY, ECONOMICALLY**

-with SIMONDS T-18 Chipper Knives

More Chips in Good Shape!

For more usable chips and less waste dust, get Simonds T-18 Steel Knives. They're made extra tough to take high speeds and heavy cuts without cracking or chipping out. They hold a sharp cutting edge *hours longer* — produce uniform chips *hours longer.*





-with SIMONDS RED STREAK Paper Knives

Their Keener Edge Stays Sharp Longer!

Simonds-made S-301 Steel — developed especially for cutting paper — combines maximum hardness with toughness to give you more cuts per grind. Face-side taper, concave ground for added clearance, plus Simonds famous "mirror finish," provide a keener edge that cuts free, fast and straight. There's longer life in a Simonds Knife!

-with SIMONDS Circular Cutters

They Run True and Hold Their Edge!

On thinnest tissue or thickest board, Simonds circular cutters, slitters and perforators cut smooth, easy and true. These "cost cutting cutters" are made of Simonds own special electric-furnace steel — specially heat treated and precision-ground to uniform roundness and thickness. There is no better steel for edge holding. There is no better value for your cutter money.

For Fast Service from Complete Stocks

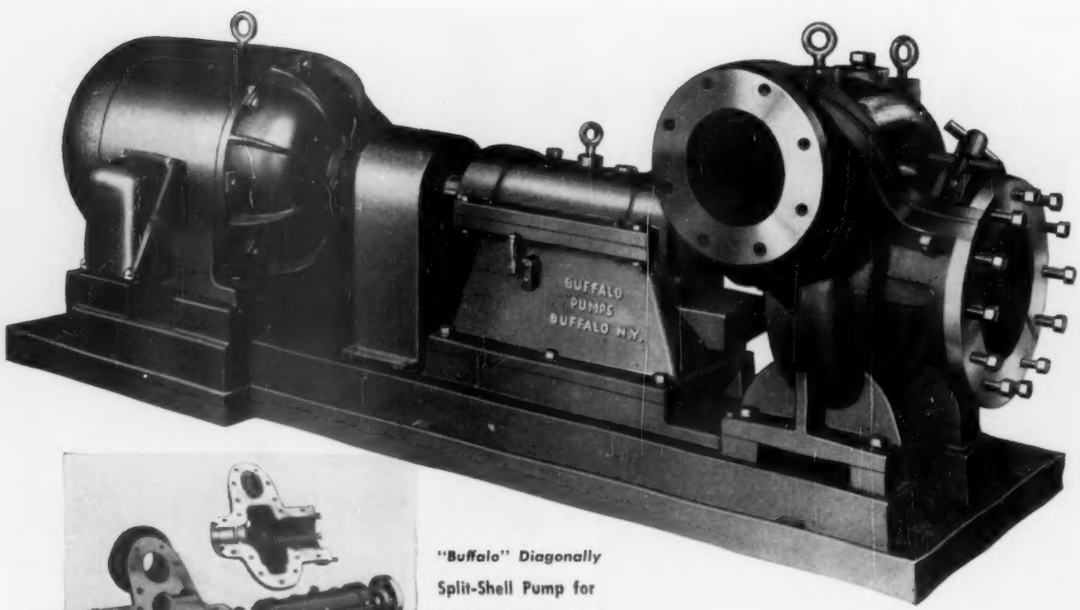
Call your **SIMONDS Industrial Supply DISTRIBUTOR**

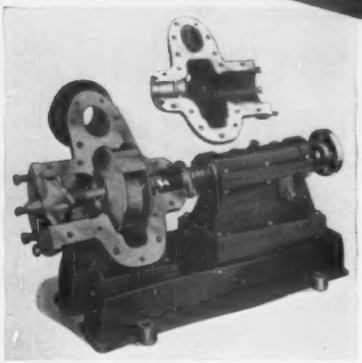
SIMONDS SAW AND STEEL CO.
FITCHBURG, MASS.

Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon, Canadian Factory in Montreal, Que., Simonds Divisions: Simonds Steel Mill, Lockport, N. Y., Heller Tool Co., Newcomerstown, Ohio, Simonds Abrasive Co., Phila., Pa., and Arvida, Que., Canada

Yes—it costs more to build but

FAR LESS TO RUN





"Buffalo" Diagonally Split-Shell Pump for high-consistency stocks

"Buffalo" Diagonally Split-Shell Pump with booster screw impeller for high consistency stock with low submergence. Note easy access to impeller and stuffing box.

Yes, all parts of "Buffalo" Paper Stock Pumps are deliberately oversize, because from our many years of working with the paper industry, we know what a pump must have to operate economically, year after year. First, the overall strength to stay on the job. Second, the accessibility to make maintenance simple and fast. Third, efficiency that will be reflected in your power bills. And fourth, a broad line to give you the *best* pump for the job.

All these factors, while they add to the cost of building "Buffalo" Paper Stock Pumps, make up the "Q" Factor* that multiplies your operational savings through the years. This *major* economy of operation is the reason why "Buffalo" is the choice of paper firms everywhere. Write for Bulletin 953-J for the engineering details on this complete line of pumps "Custom-made" for the paper industry.

**The "Q" Factor—the built-in Quality which provides trouble-free satisfaction and long life.*

BUFFALO PUMPS

Division of Buffalo Forge Co.

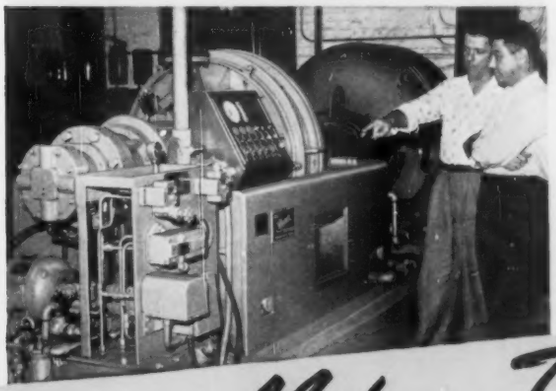
"Buffalo" PUMPS

220 MORTIMER ST. BUFFALO, N.Y.

Canada Pumps, Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

One of the Bauer No. 442 Pump-Through Refiners at Otsego Falls Paper Mills. Left to right, Cliff Sage, Jr., Paper Mill Superintendent; Joe Cutro, Plant Engineer.



A Paper Makers Dream

Control Panel of the Bauer Pump-Through Refiners. Left to right, Joe Cutro, Cliff Sage, Jr., and Bauer's Electronic Engineer Don Michel.

At Otsego Falls Paper Mills, Inc., Division of Menasha Wooden Ware Corporation, Otsego, Mich., two Bauer No. 442 Pump-Through Refiners prepare the stock to the desired degree through automatic regulation. This is effected by sensing slight variations in the freeness of stock on the wires.

Cliff Sage, Jr., *paper mill superintendent, says the machine is a paper maker's dream, due not only to the automatic regulation, but also to leveling off fluctuations in stock characteristics . . . better hydration . . . better formation . . . higher speed . . . fewer breaks . . . less shrinkage . . . lower horsepower . . . better and more uniform quality of paper.*

We'll be glad to give you full information about the automatic hook-ups of Bauer Pump-Through Refiners. Write, wire, or phone us.

The Bauer Bros. Co.

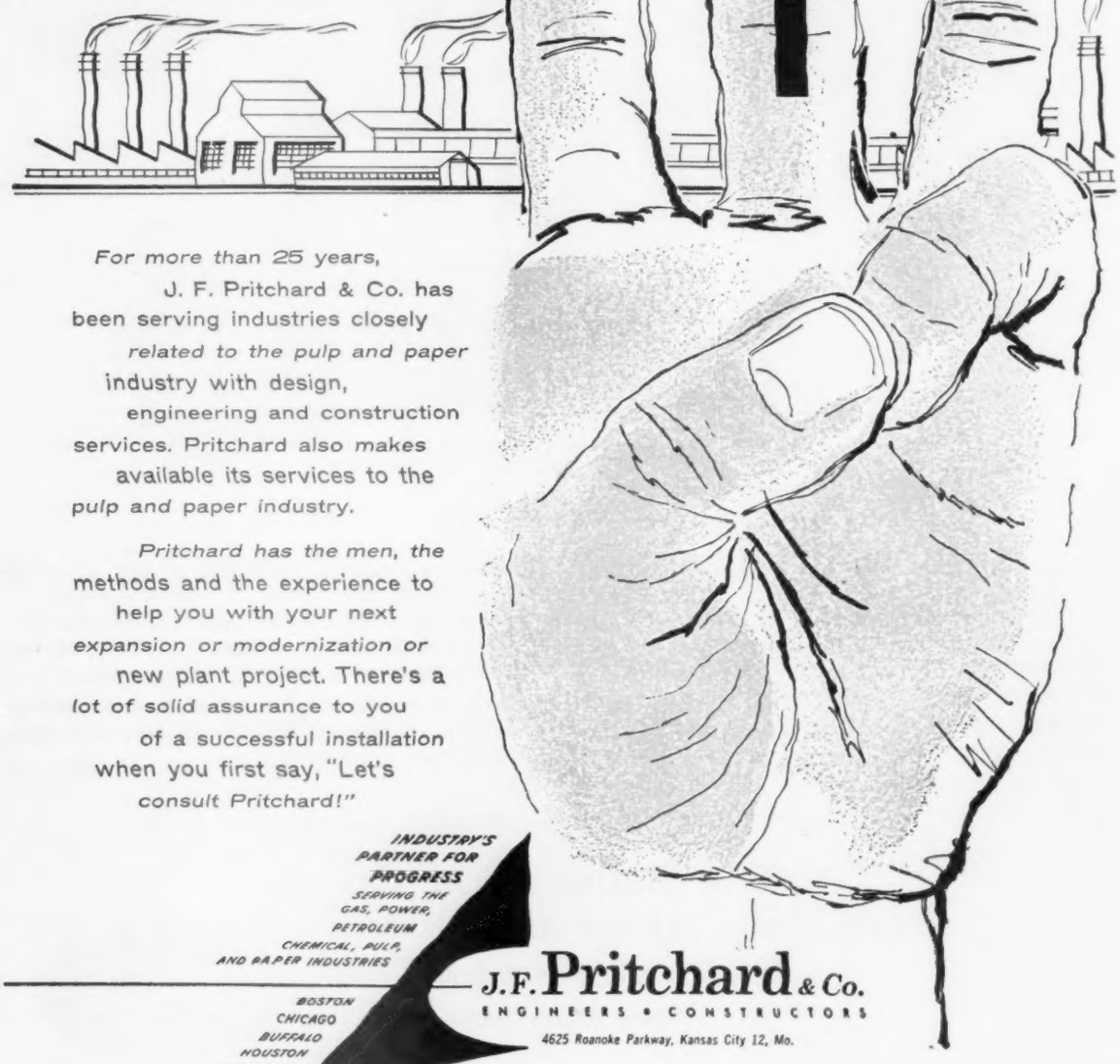
DISC REFINER HEADQUARTERS

1706 Sheridan Ave. • Springfield, Ohio

Phone FAirfax 3-5501

Pritchard

... a partner for progress



For more than 25 years, J. F. Pritchard & Co. has been serving industries closely *related to the pulp and paper* industry with design, engineering and construction services. Pritchard also *makes* available its services to the *pulp and paper industry.*

Pritchard has the men, the methods and the experience to help you with your next *expansion or modernization or* new plant project. There's a *lot of solid* assurance to you of a successful installation when you first say, "Let's *consult Pritchard!"*

INDUSTRY'S PARTNER FOR PROGRESS
SERVING THE GAS, POWER, PETROLEUM CHEMICAL, PULP, AND PAPER INDUSTRIES

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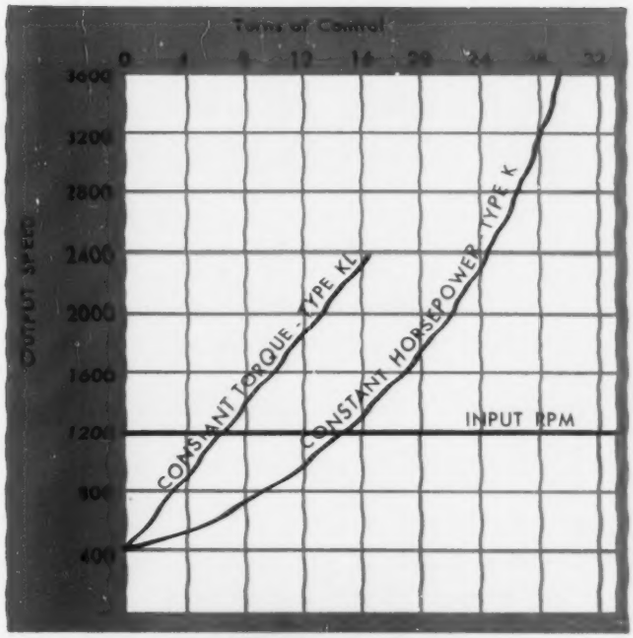
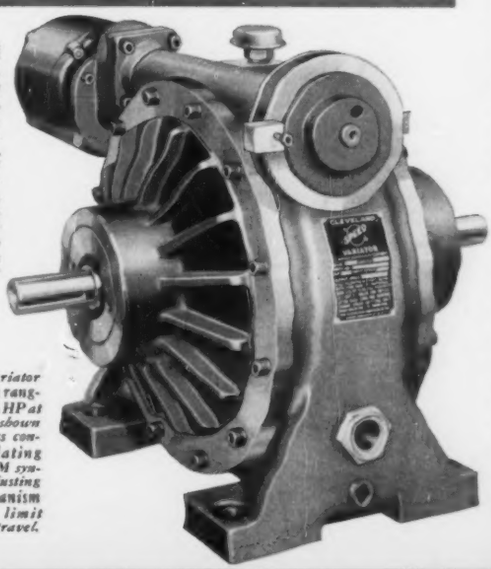


Typical speed regulation curves for the Types K and KL Variators. Type KL offers a linear speed regulating pattern, often an advantage in automatic control applications. Output speed regulation of the Type K Variator follows a geometric progression pattern. Starting at the minimum output speed, each turn of the speed regulating wheel produces a fixed percentage increase in output shaft speed.



The Cleveland Speed Variator is available in 18 models ranging from fractional to 16 HP at 1730 input RPM. Unit shown at right, used in process control, has speed regulating worm driven by 75 RPM synchronous motor, with adjusting shaft indicating mechanism modified to actuate limit switches to prevent overtravel.

CLEVELAND SPEED VARIATOR

Accurately Provides Dependable, Infinitely Variable Speed Control

ANNOUNCED late in 1954, the new Cleveland *Speed Variator met instant, enthusiastic acceptance.* Engineers and designers of industrial equipment already have put thousands of units into use on *such varied equipment as cigarette making machines,* textile machinery, metalworking machin*ery, pharmaceutical equipment, transfer tables,* conveyors and experimental and testing equipment of many types.

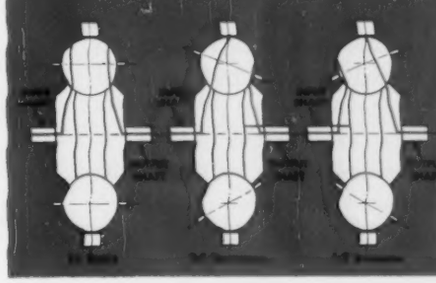
Infinitely variable, the Cleveland Speed Variator gives stepless speed over a full 9:1 range—from *⅓ to 3 times input speed. Output speed can be* adjusted by either a hand wheel on the Variator or by manual or automatic remote control.

The Cleveland Speed Variator offers these major advantages:

1. An extremely compact unit with input and output shafts in line and rotating in the same direction.
2. Almost any input speed up to 1800 RPM can be used—either clockwise or counterclockwise rotation.
3. Rated for constant horsepower output over a 9:1 or 6:1 range; or for constant output torque over a 6:1 *range.*
4. Speeds infinitely variable over entire range of adjustment.
5. No slippage—positive torque response mechanism adjusts in direct proportion to the loads encountered.
6. Long life and minimum maintenance due to absence of belts or complicated linkages.
7. Ample bearing support for overhung pulleys on both input and output shafts.

Write for Bulletin K-200 for detailed description with photographs, sectional drawings, rating tables and specifications.

HOW THE CLEVELAND SPEED VARIATOR WORKS



Power is transmitted from input shaft to output shaft through alloy steel driving balls which are in pressure contact with discs attached to the two shafts.

Relative speeds of the shafts are adjusted by changing the positioning of axles on which the balls rotate (diagram, right, shows cutaway Variator with hand regulating wheel).

"It's the Drive That's on the Ball."

THE CLEVELAND WORM AND GEAR COMPANY

Speed Variator Division, 3268 East 80th Street, Cleveland 4, Ohio

Sales Representatives in all major industrial markets • In Canada: Peacock Brothers Limited.

A reputation for leadership

Skill and experience have earned APPLETON MACHINE COMPANY the reputation for *leadership* with the pulp and paper industry. That's why APPLETON was chosen to build this 16 roll, 84″ supercalender that sets the pace for glassine production efficiency.

This high-pressure glassine stack combines functional beauty with rugged strength and advanced mechanical design . . . and like all other APPLETON products, it was *custom-built* for the specific job and installation.

Let an APPLETON representative help *you!* He has an unmatched record of problem-solving.

APPLETON MACHINE COMPANY

APPLETON, WISCONSIN

Would you slice bread with a sword?

You could, but you would do a better job with a bread knife. Whatever the job, the right knife does it best! The right knife for your chipping operation is an "OK BATTLE AXE". It's especially designed to do the job best, to give maximum production of uniform chips with a minimum of sawdust and splinters.

Special high alloy steel, hardened in salt furnaces and carefully tempered, gives every "OK BATTLE AXE" blade its extra toughness, its extra-long edge life. To you, this means longer runs between grindings.

"OK BATTLE AXE" knives are made to customer's requirements and complete records are kept to assure exact duplication of original orders without delay.

Ohio Knife Co. field service men, experienced in chipping operations, can be sent to your mill to analyze your particular chipping problems and recommend correct tempers, bevels, etc. to best suit the job. No obligation, of course.

For complete information on "OK BATTLE AXE" Chipper Knives, write Dept. 49-F.

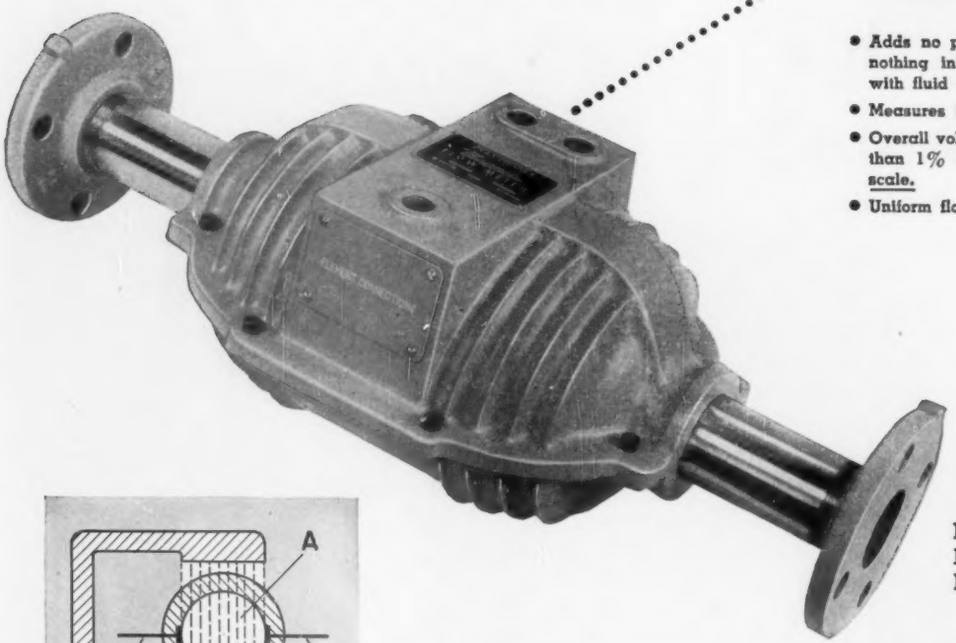
THE OHIO KNIFE CO.

CINCINNATI 23, OHIO

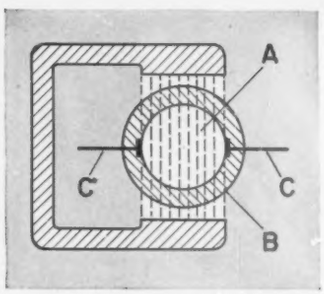
Manufacturers of OK HOG KNIVES, VENEER KNIVES, CHIPPER KNIVES, PLANER KNIVES.

NEW! a flow meter with no flow restrictions!

- Adds no pressure drop — nothing inside pipe to interfere with fluid flow.
- Measures fluid velocity directly.
- Overall volumetric accuracy better than 1% of range over entire scale.
- Uniform flow scale.



FOXBORO MAGNETIC FLOW METER



SIMPLE, TROUBLEFREE, OPERATION

The Foxboro Magnetic Flow Meter operates on the same principle as a power generator. A magnetic field (A) is maintained through a standard pipe section (B) of stainless steel or other non-magnetic material. This pipe section is lined with Kel-F® or other insulating material. Liquid passing through pipe acts as moving conductor, generating an electric voltage which varies in proportion to liquid's average velocity. Flush electrodes (C) in pipe wall "pick up" this voltage which is recorded in desired flow units by Dynalog Electronic Recorder or Controller.

For pulp stock of any consistency, thick black liquor, corrosive chemicals, or any other paper mill liquid — this entirely new-type meter accurately measures flow *magnetically*. It completely ignores such common metering headaches as turbulence, suspended solids, and variations in conductivity, density and viscosity. It even measures reversing flows!

Installation is simple. The magnetic spool piece connects into the line like any equivalent length of pipe — no seals, purges, meter runs or straightening vanes required. Connects by 2-conductor cable to remote Dynalog Electronic Flow Recorder. Integrator and controller components can be added.

Maintenance is practically eliminated. There are no pressure taps to become plugged or frozen, no working parts to foul.

Learn how this precise, troublefree meter can help your processing. Write for complete details of the Foxboro Magnetic Flow Meter.

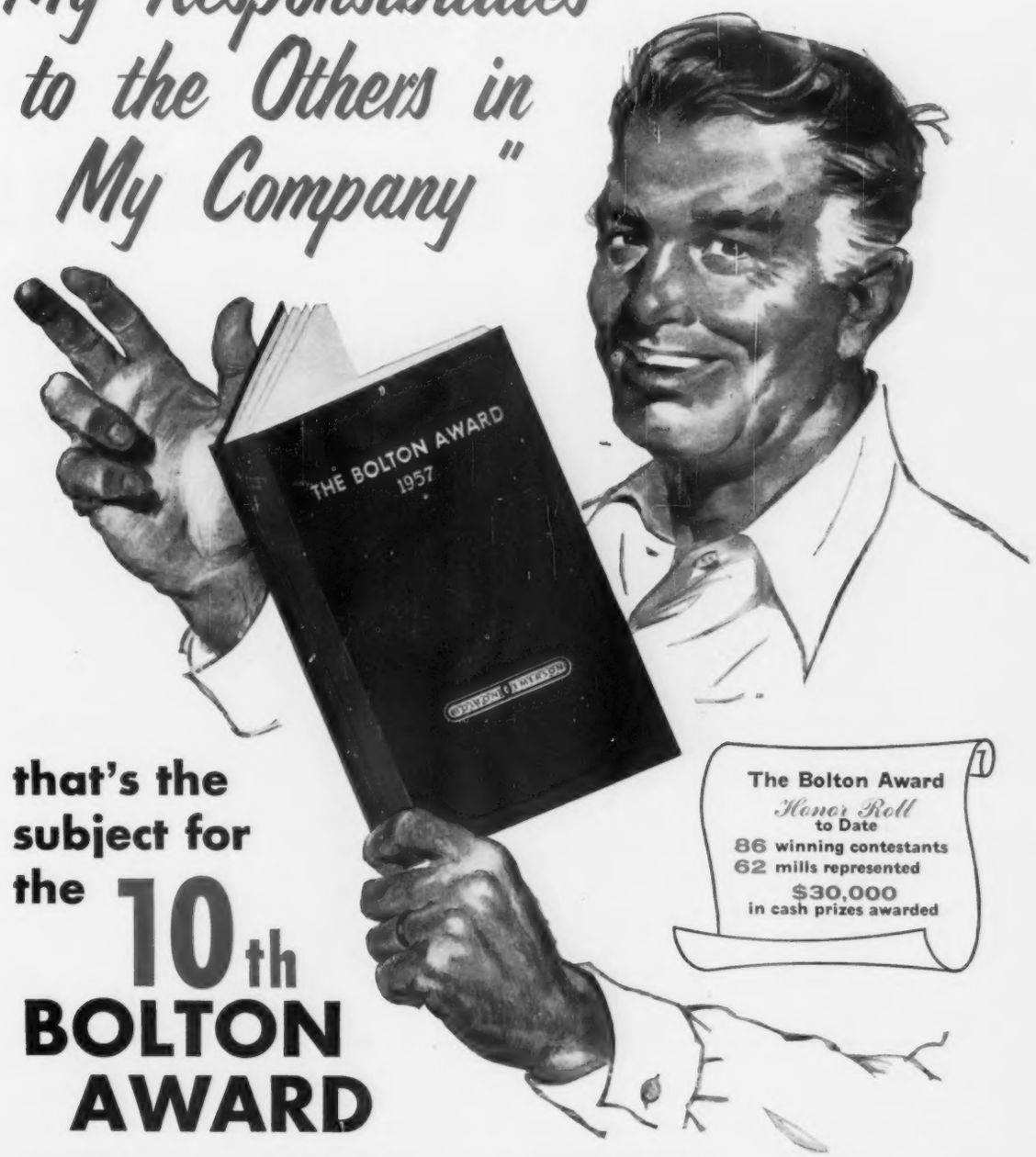
THE FOXBORO COMPANY, 991 NEPONSET AVENUE, FOXBORO, MASS., U. S. A.

FOXBORO
REG. U. S. PAT. OFF.

Foremost in FLOW METERING

FACTORIES IN THE UNITED STATES, CANADA, AND ENGLAND

"My Responsibilities to the Others in My Company"



that's the subject for the 10th BOLTON AWARD

TEN NATIONAL PRIZES: **$1,000, $750, $500** and seven of **$200** each.

OPEN to all pulp and paper mill employees in North America.

CLOSES Midnight March 31, 1957.

MAIL your entry to: The Secretary and Treasurer, THE AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION, 327 So. La Salle St., Chicago 4, Illinois.

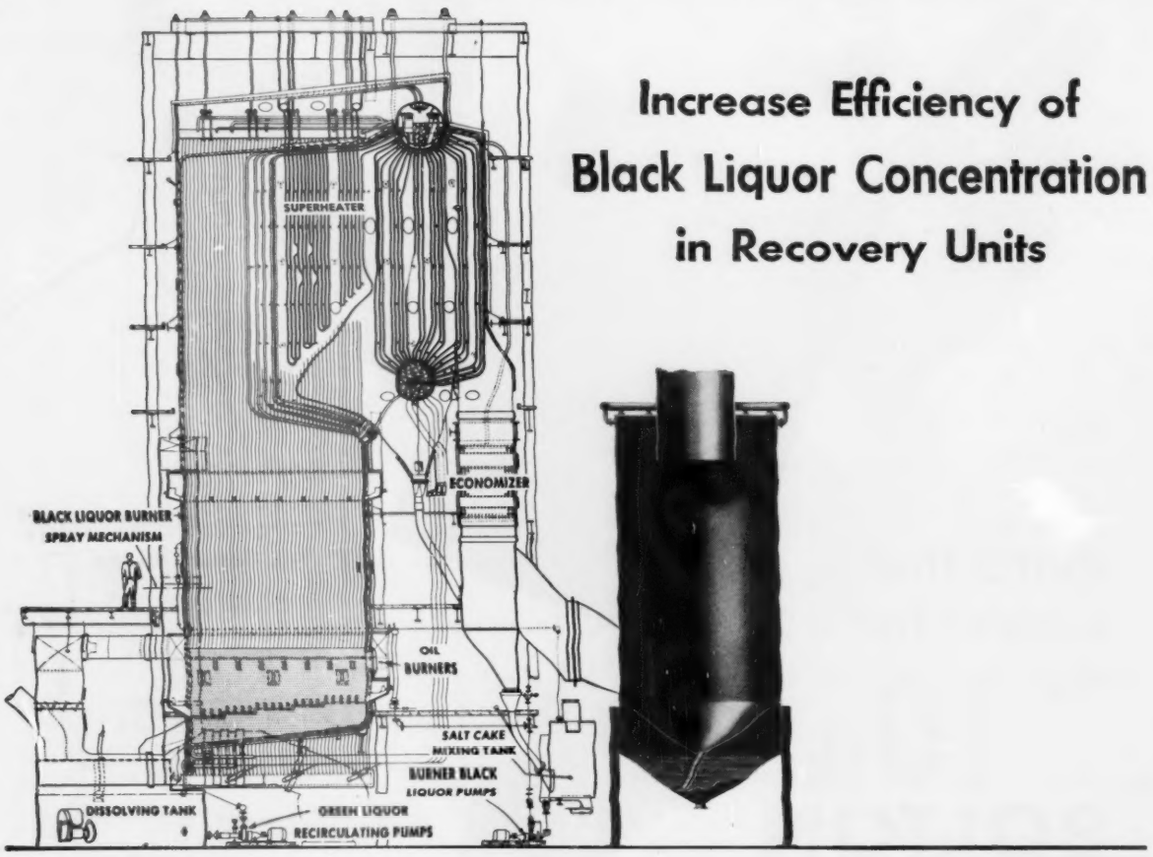
1500 WORDS or less, typed double spaced on 8½" x 11" sheets. Cover sheet only to include: name, mill and address, position, and home address.

PUBLISHED: The 10 prize-winning papers are published in book form for free distribution.

SPONSORED BY: John W. BOLTON & Sons, Inc., and The EMERSON Manufacturing Company, Division, Lawrence, Massachusetts, and under the auspices of THE AMERICAN PULP AND PAPER MILL SUPERINDENTENTS ASSOCIATION.

High Availability...
No Moving Parts...
No Carryover...

B&W CYCLONE EVAPORATORS



Increase Efficiency of Black Liquor Concentration in Recovery Units

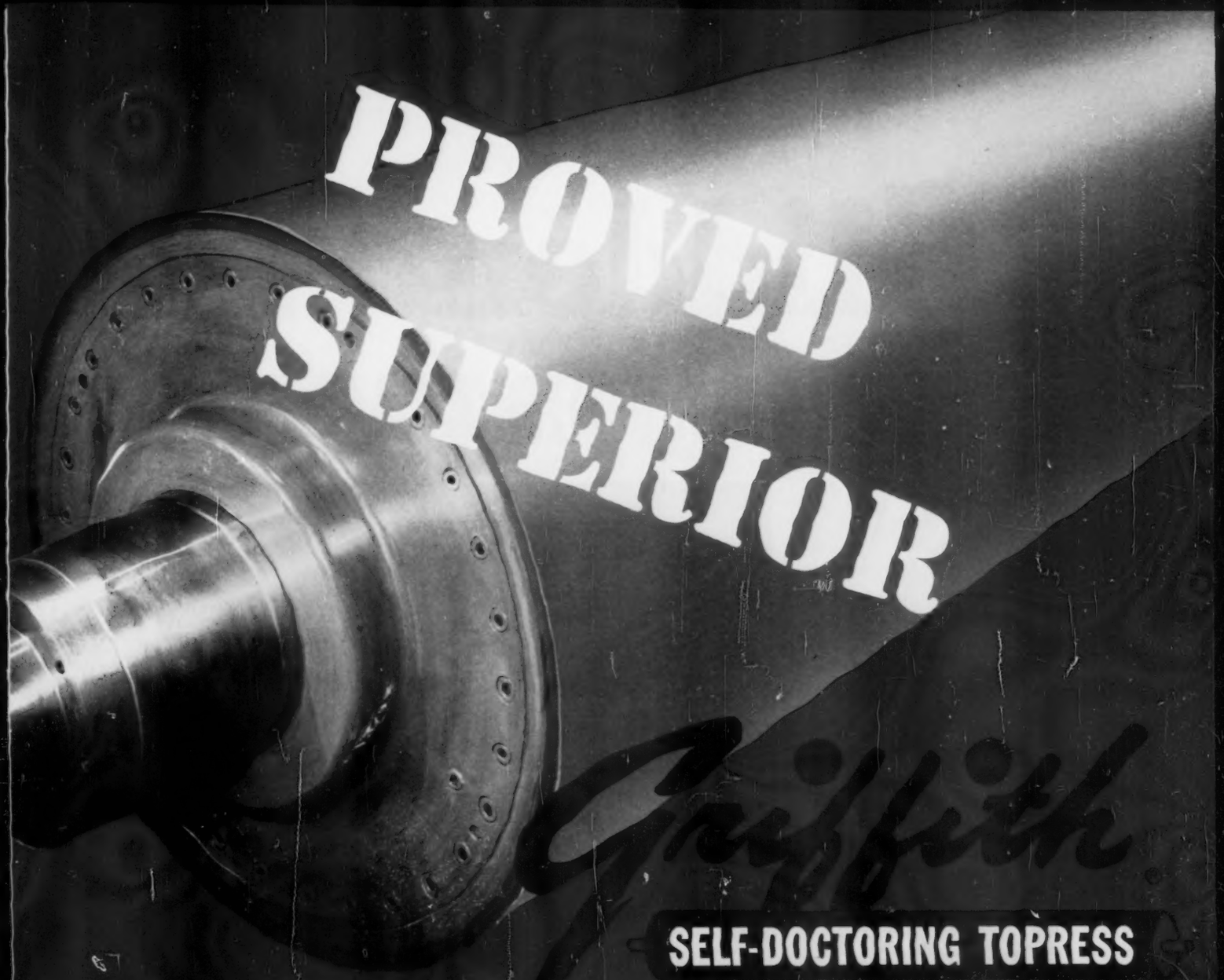
The B&W Cyclone Evaporator utilizes the heat in flue gases to concentrate liquor solids being processed in the liquor recovery system. It requires no moving parts to accomplish this.

Hot flue gases are brought into the Cyclone Separator at high velocity in such a way as to give them a cyclonic motion. Black liquor is sprayed in at several points; the inner shell of the cylinder is continuously washed by the droplets thrown against it by the action of the gas, and water is evaporated during this process. Droplets fall by gravity to the bottom, where they are collected. They then go to the recovery furnace.

Dependable, continuous service is essential in all parts of the recovery unit. B&W Recovery Units, with B&W Cyclone Evaporators, have proved their value for efficient chemical and heat recovery with low-cost operation. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd Street, New York 17, N.Y.

BABCOCK & WILCOX
BOILER DIVISION

P-800



SELF-DOCTORING TOPRESS

. . . in service

SDT rolls are used by leading paper manufacturers throughout the world to increase production and reduce maintenance costs. They give better water removal at high speeds and increase felt life. SDT rolls eliminate picking of the sheet and keep breaks in the sheet to a minimum. In many installations doctor blades are not required with SDT rolls.

. . . in construction

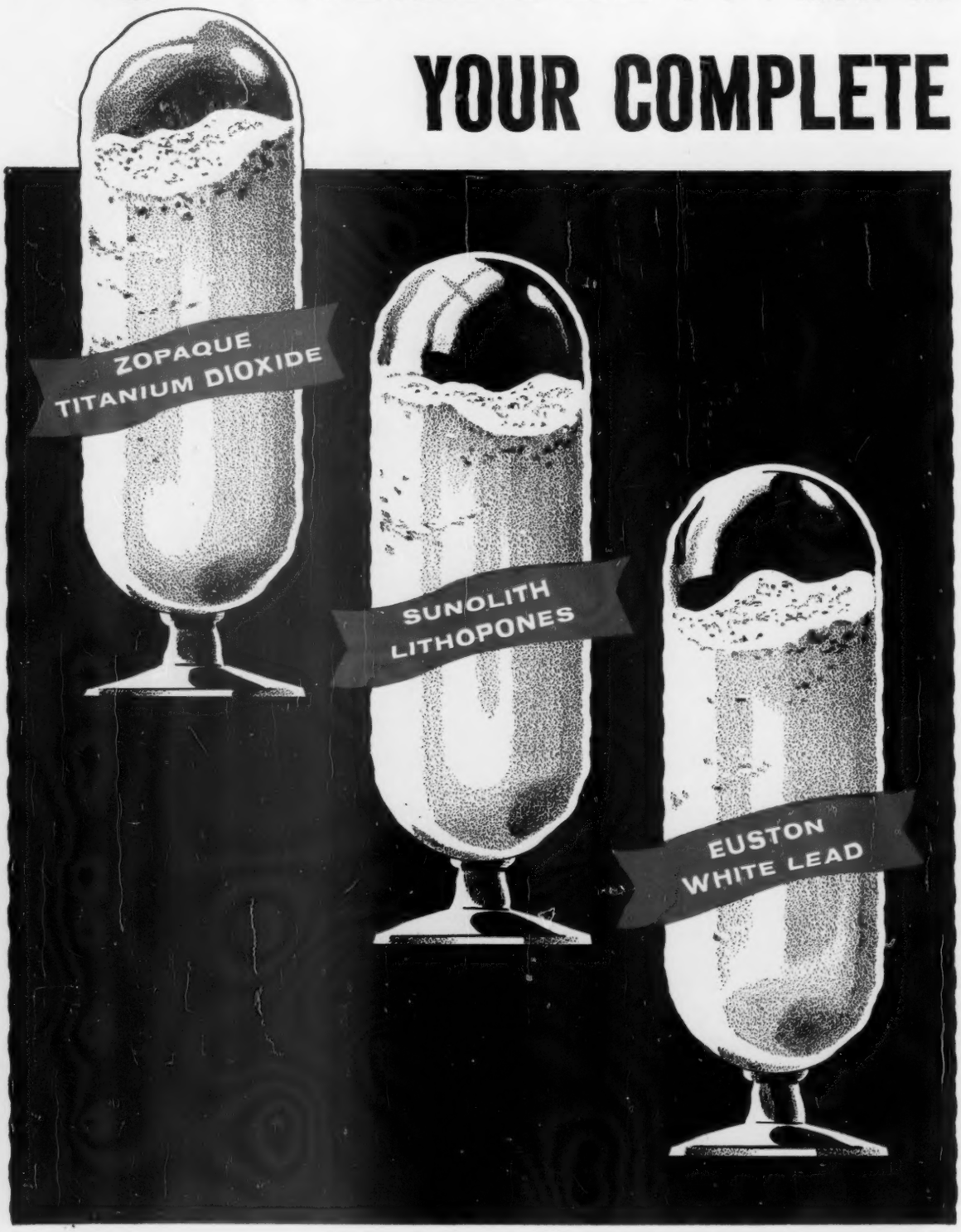
Forty-six years of specialized research and experience goes into every Griffith rubber roll covering. Each roll is custom-covered to the exact hardness required for top performance. Griffith craftsmen are specialists in covering all types of rolls and precision drilling of rubber covered suction rolls for the pulp and paper industry.

WRITE, WIRE OR TELEPHONE FOR AN ESTIMATE ON YOUR JOB

QUALITY SERVICE 46 YEARS

Griffith

Glidden... now in YOUR COMPLETE



best position ever to supply

WHITE PIGMENT NEEDS!

One source can meet your complete white pigment requirements. Specify Glidden, supplier of these pigments to industry: *ZOPAQUE Titanium Dioxide*, SUNOLITH Lithopones and EUSTON White Lead. These three pigments meet practically all formulations for plastic, paint, rubber, paper and ceramic products. Continuing Glidden expansion and modernization now make it possible to produce greater supplies of pigments than ever before!

THE GLIDDEN COMPANY

CHEMICALS—PIGMENTS
METALS DIVISION

QUALITY Glidden PRODUCTS

BALTIMORE, MARYLAND
COLLINSVILLE, ILLINOIS
HAMMOND, INDIANA
SCRANTON, PENNSYLVANIA

ZOPAQUE TITANIUM DIOXIDE

Production doubled; further expansion underway

The new Adrian Joyce Works, Baltimore, means doubled production of ZOPAQUE—*the whitest white pigment* obtainable. In ZOPAQUE, Glidden research has achieved greater whiteness and an accelerated dispersion rate plus outstanding gloss and color retention, *low reactivity. Rutile and Anatase grades.*

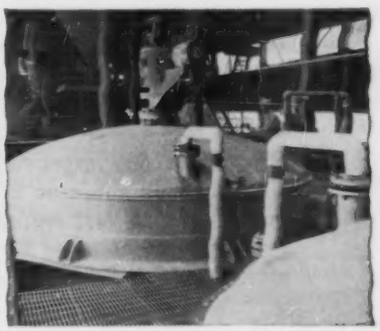
SUNOLITH LITHOPONES

Modernized plant facilities *increase efficiency*

Improved facilities and processing efficiency at its Collinsville, Illinois plant, *enable Glidden to meet the steady demand* for SUNOLITH Lithopones . . . available in a wide range of grades, including Titanolith (titanated lithopone) with higher hiding value than regular *lithopones.*

EUSTON WHITE LEAD

Highest quality basic *lead carbonate available*



Continuous research and development at Euston Lead Division, Scranton, *Pennsylvania, produce white lead of* highest purity and quality. EUSTON White Lead has lower oil absorption than other white pigments. Finer, more uniform particles assure rapid solution, *exceptional suspension. Various grades.*

A $.95 SAVING
PER TON OF PAPER* with

Size Requirements (without Nalco 680) . . 30.25 lb.
Size Requirements (with Nalco 680) . . . . 21.60 lb.
Pounds of Size Saved . . . 8.65
Alum Requirements (without Nalco 680) . 40.00 lb.
Alum Requirements (with Nalco 680) . . 30.00 lb.
Pounds of Alum Saved . . . 10.00
Savings on Size (at 15.3 cents per lb.) . . $1.32
Savings on Alum (at 2.2 cents per lb.) . . .22
$1.54
Less Cost of Nalco 680 (at 10.7 cents per lb.) 59
TOTAL NET SAVING, per ton of paper $.95
Nalco #680
STABILIZED Sodium Aluminate

Cutting size and alum requirements is only one advantage of Nalco 680 — the best, the most stable commercial grade sodium aluminate you can buy! Use it for higher pH and lower acidity!

Don't confuse the production saving in this case history with a cutback in essentials. *This mill makes fine writing paper, and* quality is the number one requirement.

How Nalco 680 improved specifications while cutting the cost is obvious in the following: *Size test ratings jumped from a range of 45-50 up to 50-60. Ash content went from 5.6-5.8% to 7-7.1%.*

There are many, many other case histories of Nalco 680 success — power savings, *greater alumina retention, cleaner* machines, better products.

If you would like results like this in your mill, we suggest you check with your Nalco Representative. He has the facts on Nalco 680 applications and will help you all along the way.

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6213 West 66th Place • Chicago 38, Illinois
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NORTHWESTERN UNITED STATES, HAWAII and ALASKA
The Flox Company, Inc., Minneapolis 3, Minnesota
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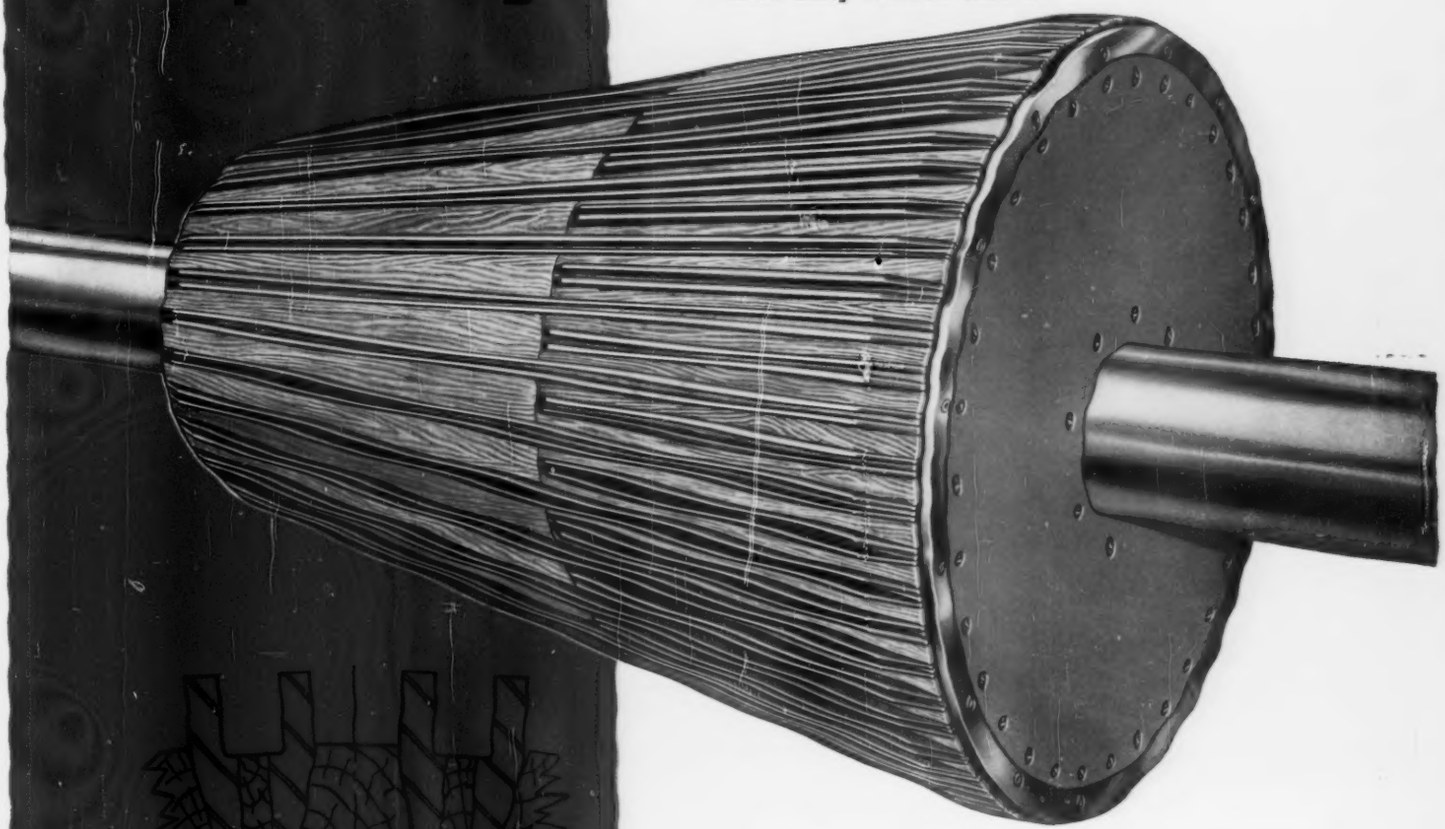
THE Nalco® SYSTEM...Serving the Paper Industry through Practical Applied Science

E.D. Jones

Adapta-Plug

A revolutionary advance in JORDAN PLUG *design*

—and only Jones has it



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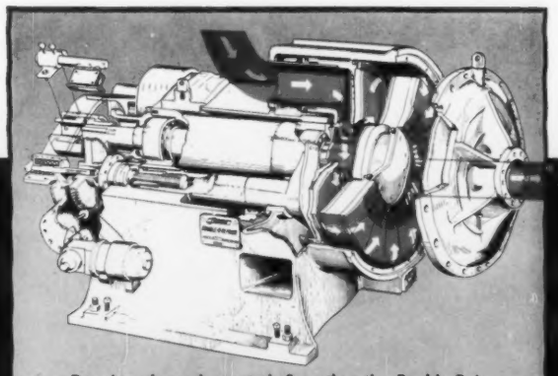
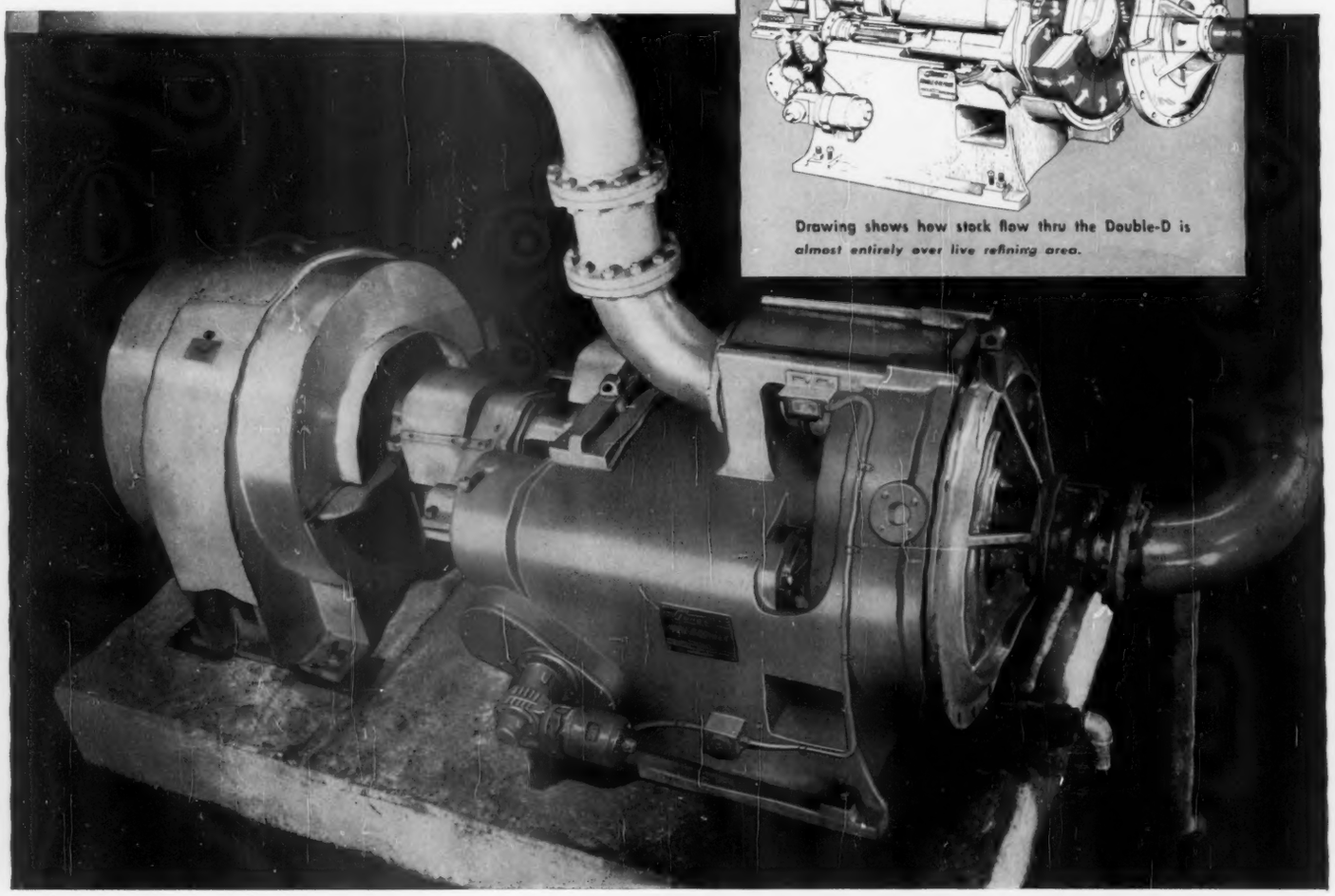
This installation photo illustrates the compactness, *economy of floor space and simplicity of* piping of the Double-D Refiner.



Drawing shows how stock flow thru the Double-D is *almost entirely over live refining area.*



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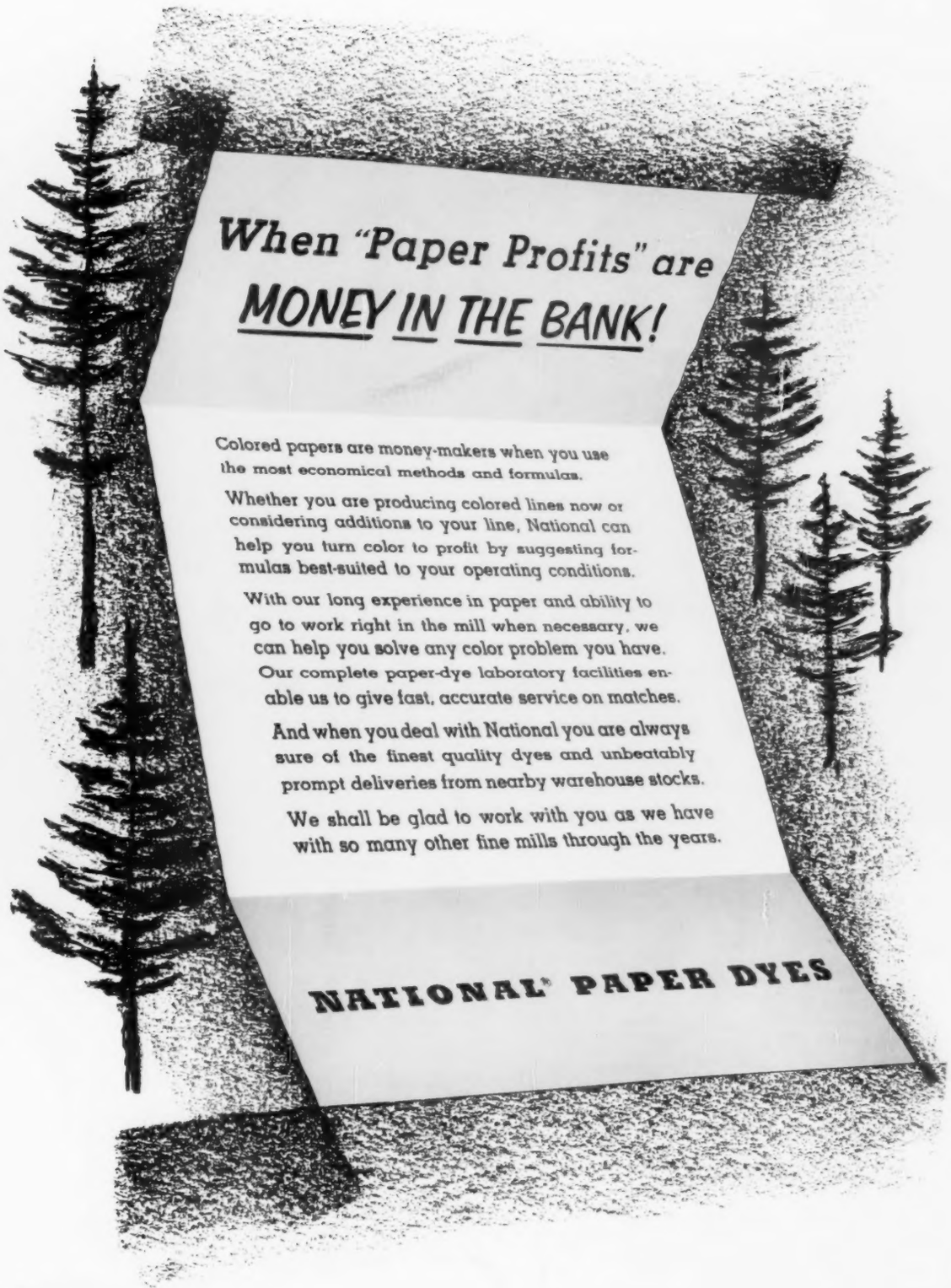
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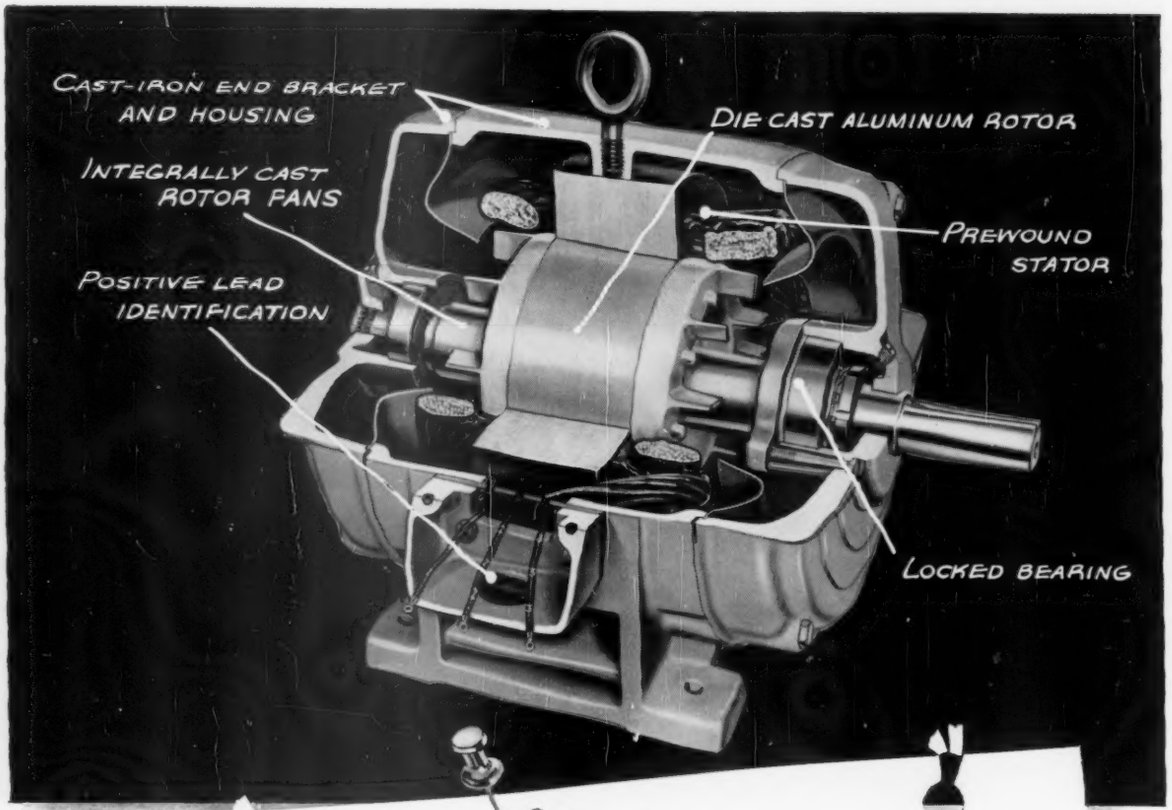

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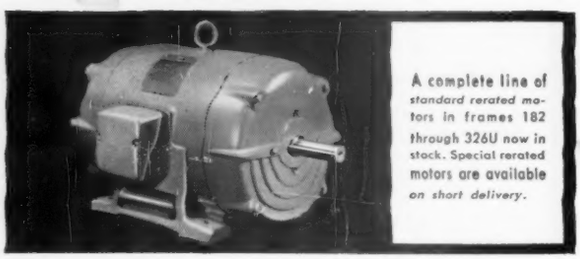
There are many other features such as cast iron construction, positive lead identification, split conduit box—but our new bulletin No. 1700 describes all the many extras you get in a Louis Allis standard motor. Write for your copy.



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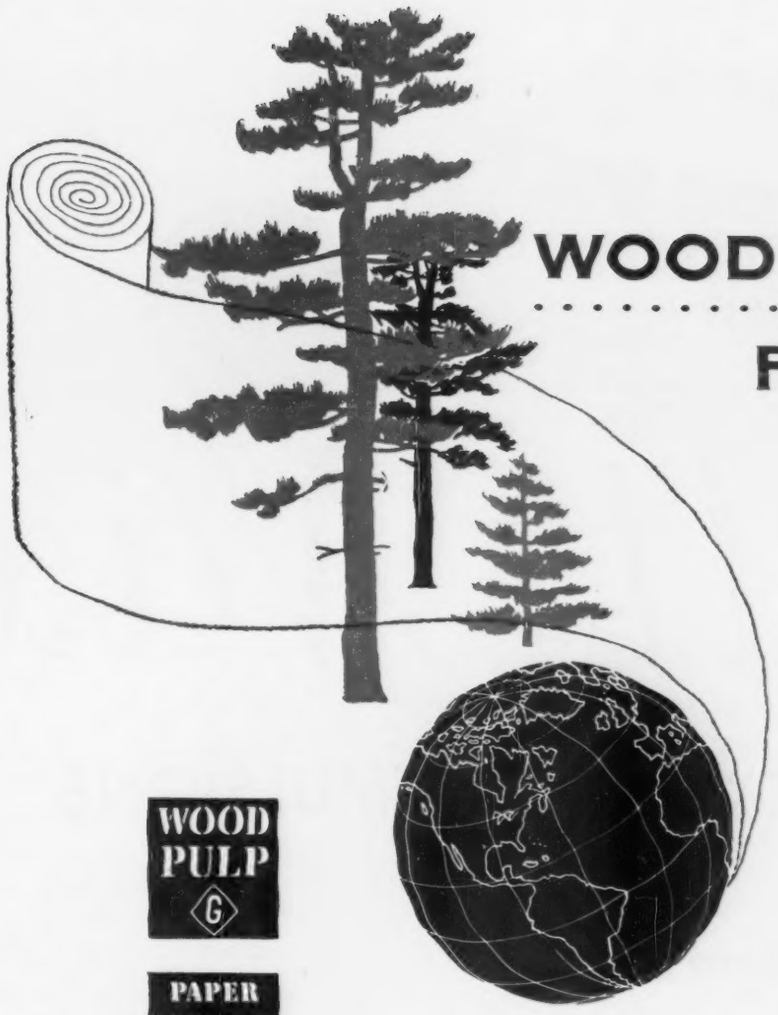

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What Kind of a Year Will 1957 Be?

PULP & PAPER reports crystal gazing by several leaders—President Luke of APPA sounds a warning

• As this industry's production gears ground through another record year, best in a series of best years (four straight and another one possibly coming up), industry leaders began to ask: *"What kind of a year will it be in 1957?"*

The answer: 1957 will be a good year. Production will be as great if not greater in 1957, most observers say. There are a few qualifications. Greater production may not mean more profits because the industry's capacity is greater. It needs a high operating level for maintenance of profits.

"In a six day work week," one general manager told PULP & PAPER, "we work five days to break even, make money on the sixth,"

The Middle East situation may have varying effects on the industry. A shortage of oil will affect Europe's production by an estimated 20%. Available dollars will have to be allocated for vital oil purchases leaving Europe and less money will be available to buy other U.S. products such as pulp and paper.

An opposite effect of the Suez Canal crisis may occur. The U.S. may have to gird for war, and stepped up mobilization would send the entire nation's industrial efforts into high gear.

NO CHANGE IN PULP PRICES . . . No change is seen in pulp prices for the first quarter of 1957. There may be a change in one or two brands but nothing to indicate a trend, according to sources interviewed by PULP & PAPER. The quickened rhythm of new mill expansion mounted in 1956 until midyear, when industry leaders began to say, "take it easy."

HERE'S WHY THEY CAUTIONED . . . North American woodpulp capacity at start-up of 1956 was 34.6 million tons (U.S., 23.6 million tons and Canada, 11 million tons). Under actual construction is 2,748,000 tons in the U.S and 1,309,000 tons in Canada, a total increase of 4,057,000 tons.

Definitely scheduled to come into production in 1958 is another 1,618,000 tons in North America, 1,807,000 tons by early 1959 and a possibility of 3,665,000 tons by 1960.

Materialization of all of these projects would increase U.S. woodpulp production by 31.7% by 1960 and Canada by 33.4%.

Some leaders said the spurt in expansion began to take on a pattern familiar in the Twenties, when, at a time that most other industries were booming, pulp mills operated at less than 78% capacity.

As David Luke, Jr., president of West Virginia Pulp and Paper Co. and president of the American Paper & Pulp Assn., said, "it is a matter of timing." The long term picture is bright.

The cautionary moves and advice have had their desired effect. The race for mill sites began to subside. Some brash ventures withered on the vine and by year end, one spokesman, who had expressed considerable concern time and again to PULP & PAPER, said that the picture was brighter and that he was not worried about the coming year.

OTHER SIGNIFICANT HIGHLIGHTS OF 1956 . . .

Wages reached an all-time high.

The nation's economy and population continued to grow. One economist said that even the government does not realize how fast our population is growing.

Industry operations continued at a high level and people willingly went further into debt despite high-priced money.

Packaging continued its upsurge. No one really knows how big the packaging world is, says Norman Greenway, president of the Folding Paper Box Assn. of America and now vice president of Continental Can Co. "Some estimates say $10 to $15 or more billions a year are spent on packaging."

TRR IS STUDIED BY PLANNERS . . . The emphasis placed by the manufacturing end of the industry on the U.S. Forest Service's Timber Resource Review before plunging into expansion, was also significant. Certainly, the availability of timber became of prime importance, especially in new mill sites in the South. One observer puts it this way, "TRR indicates that for the first time we have this excessive growth, although softwoods are not as plentiful. This is good because

About Our Cover Chart—No "Saturation" Here

A significant development in 1956 was the growing per capita paper consumption (see cover) At a time when some voices said the U.S.A. had reached a saturation point in per capita paper consumption, the nation is estimated to have used between 435 and 440 lbs. per person in 1956, according to APPA. This is a new record, an increase of 37% in consumption in the past 10 years and almost double that of 20 years ago, says APPA.

We know population growth will increase paper demand. Per capita use increasing, however, is good news too, and unexpected to many.

In the light of such past performance. PULP & PAPER (in chart on cover) projects a further increase in per capita paper consumption in the U.S.A. to an estimated 475 lbs. in 1960. Unrealistic? "Not so," says one industry observer, "it may be low!"

On a world-wide scale, there are signs that the industry is booming, and that world production is taking a big jump. One close observer says: Watch Africa, the Near East, India, Ceylon and Malaya. Africa, he says, is really beginning to blossom. Northern Europe and Australia have expansion underway.

It will be around 1958 before South America begins to show up in any substantial increased production, this observed stated.

Record Year—In All Departments

	1956 (estimated)	1955
Pulpwood Consumption (million cords)	36.4	33.3
Pulp Production (million tons)	23.6	20.8
Paper (million tons)	15.6	14.5
Board (million tons) (Includes wet machine board and building board)	15.9	15.6
Total Paper and board (million tons)	31.5	30.1
Sales—paper and allied products	$10.8 billion	$10 billion
Per Capita Paper Consumption (lbs. per person)	440	420

Bird's Eye View of U.S.A. Production 1955 and 1956

it indicates to companies that they can't sit back and relax. They will have to plant trees."

THE "FREE TRADE AREA" . . . Another fact which may have an adverse effect on the industry's exports to Europe, advises Eric Lagerloff of the APPA, is the proposed "free trade area" comprised of six countries forming the European Coal and Steel Community (France, Italy, West Germany, Belgium, Holland and Luxembourg), the three Scandinavian countries, and Austria and Switzerland.

Under this proposal, manufactured products would eventually come in duty free within the community of nations. Purpose: To enable European countries to compete on a more equal basis with the United States and Soviet Russia.

Warning Sounded by President Luke

Early in December, president Luke of APPA presented a "state of the industry report" to the Salesmen's Assn. of the Paper Industry. Also present were many presidents of pulp and paper companies and pulp salesmen. Here are some highlights:

"Experts say that in the next 10 years alone the U.S. population is likely to grow by 30 million. This combination of rapid population growth and expanding per capita consumption of paper enables us to look forward with confidence to large further gains in output and sales of paper and its products.

"One would never guess from looking at the telescoped figures for a 10-year or 20-year period that the paper industry had ever suffered bad times, or could well suffer them again. The facts are otherwise. Our industry has suffered many and severe periods of depression despite its strong long-term growth.

"These periods of depression have all accompanied or followed the creation of temporarily excessive productive capacity. Papermaking is a high capital and low turnover industry. It requires about $1 of capital for each $1 of annual sales. Pulp and paper mills have a large proportion of fixed costs. Once the mills are built, these fixed costs exert an overwhelming pressure to keep the mills operating as fully as possible.

"Taking our industry as a whole, including the strongest and most profitable producers, we had average annual earnings of only 6.7% on our net worth in the six years ending in 1929; less than half this rate in 1930; and after deficits in 1931 and 1932, we averaged less than 4.3% a year on our net worth in the 9 years 1933-41.

"The situation of our industry since 1941 has been quite different. Our previous excess of capacity was absorbed by the growth in demand. New additions to our capacity were substantial, but these were made in more orderly stages.

"But now there is considerable danger that we are about to repeat our mistakes. If all these projected increases in woodpulp capacity materialize, the increase in capacity between the beginning of 1956 and 1960 will be 32.2% in North America as a whole. The increase in the paper grades of sulfate pulp capacity in this short period would amount to 45%.

"I have no doubt that eventually all this capacity and a great deal more will be fully utilized. I am concerned only about the timing. This calls for good industrial statesmanship. We want no artificial limitations on the freedom of any member of our industry. Ours is a thoroughly competitive industry in which the largest firm accounts for less than 10% of the industry's annual dollar volume of sales. It is precisely because our industry is so widely diffused, and yet so sensitive to over-capacity, that each of us shares the responsibility for keeping expansion disciplined and orderly—in tune with growth of our markets."

Dobrow's Forecast of Industry Expansion

Here's an overall look at the paper and paperboard industry by Morris C. Dobrow, executive secretary, Writing Paper Mfrs. Assn.:

The industry gain for 1956 was 4% overall (5% paper and 4% board). Estimated 1956 production is around 31,470,000 tons (1955 was 30,100,000 tons). In the 10 years since 1946, paper has risen 56% and board 71%, a combined rise of 63%.

Production in 1957 will be about the same as 1956. Capacity will be higher, some 2,200,000 tons more capacity than 1956 and another 2,200,000 tons coming in during 1958 and 1959.

SLOW DOWN . . . One pulp expert says that expansion plans appear to be taking "a more intelligent approach," because:

1—Realization that potential supply was being generated faster than historical growth requirements appear to justify.

2—Facilities of machinery producers are so fully occupied it entails much long waiting period.

3—Loanable funds are not available to newcomers.

Pulp production in 1957 will be about the same as 1956, won't be any less, he guesstimated. The important thing is what happens to demand. Operating rates may not be as good but the demand level will probably hold throughout the year. On the whole, there will be a more competitive market, lower operating rates but not necessarily lower production in 1957, he summarized.

Total sales of paper, allied and converted products for 1956 are estimated at $10.8 billion up from $10 billion in 1955. Of this amount, wholesalers of fine printing and coarse papers rang up sales of around $2.5 billion.

For the first 9 months of 1956, the industry imported some $35,012,385 worth of paper and paper products up from $29,683,688 in 1955, reports Warren P. Bullock, manager of the

Import Committee of the American Paper Industry.

Dr. Louis T. Stevenson, former Economist for the APPA, now with Tucker Anthony & R. L. Day, estimates printing paper will rise to 4,341,000 tons in 1958; 4,480,000 tons in 1959; 5,315,000 tons in 1965; 6,112,000 tons in 1970 and up to 7,061,000 tons in 1975.

Magazine papers, 42% of printing papers, may rise from 1,585,000 tons in 1955 to 1,845,000 tons in 1959; 2,164,000 tons in 1965 and 2,831,000 tons in 1975. Very interesting is that Dr. Stevenson estimates the entire increase will be in coated grades.

WHAT WAS PULPWOOD PRODUCTION? . . . According to W. S. "Bill" Bromley, executive secretary of the American Pulpwood Assn., domestic production of pulpwood in 1956 was around 34.6 million cords; total consumption around 36.4 million cords.

Near 33 Million Tons in 1957?

By JOHN H. VOGEL

Economist, American Paper & Pulp Assn.

***Written especially for* PULP & PAPER**

• In 1956, despite weakness in some areas of the economy, the paper industry continued to show progressive growth as output rose to approximately 31.5 million tons, 5% more than in 1955.

The apparent per capita consumption of both paper and board, which is indicative of the combined effect of population growth, increased consumption by traditional users of paper and board and the developments of new products and markets, rose from 420 lbs. in 1955 to an estimated 435 lbs. In considering this sharp increase, however, one should not lose sight of the fact that in calculating apparent per capita consumption no allowance is made for changes in the volume of inventories in the hands of consumers at the various levels of distribution. And, of course, there is evidence that for some segments of the industry, inventories have in recent months been advancing.

The past year was marked by a record number of announcements concerning the construction of new mills and the expansion of existing facilities. While the American Paper & Pulp and National Paperboard associations have not completed their survey of capacity, sufficient evidence exists to suggest that an imbalance between demand and supply may temporarily exist within the next few years.

JOHN H. VOGEL, Economist, American Paper & Pulp Assn.: "A good likelihood that 1957 output will approximate 32.5 to 33 million tons."

This perhaps is a natural consequence of the rapid growth experienced in the recent past, for success ever attracts competition for its rewards. This factor, along with competition for markets from other materials and changes in distribution practices, will constitute a challenge to the industry, but—to the extent that it stimulates management to expand research programs and increase operating efficiencies—will redound to its advantage over the long term.

The long term prospects of the industry are good because it has inherent advantages in that its basic raw material is renewable and its end products, in addition to being of relatively low cost, are adaptable to a wide variety of applications.

It is considered unlikely at this time that production will continue to rise as rapidly as it has in the past two years. However, assuming a continuation of this country's economic growth, and peaceful solution of international problems currently confronting the world, there is a good likelihood that output in 1957 will approximate 32.5-33.0 million tons.

It is important, I believe, that in measuring the achievements of this industry too much emphasis is not being placed on the ever-rising production of paper and board. The fact must not be lost sight of that profits are essential to the continued well being of our industry and the evidence in that area is that for the industry as a whole profits, squeezed by rising labor, freight, and other costs have not kept pace with production and dollar sales.

WORLD SHORTAGE

"There is still a shortage of paper to supply world demand and this condition is likely to continue for sometime to come."—**P. R. SANDWELL**, Sandwell & Co., consulting engineers, Vancouver, B.C.

LOOKS OKAY FOR FUTURE

"Scott Paper Co. is in a comfortable financial position and should get through next year and possibly into 1958 without additional financing. The company has spent an average of about $35 million a year in 1954, 1955 and 1956 on plant and equipment."—**PAUL B. WYANT**, treasurer, Scott Paper Co.

PULP OUTLOOK

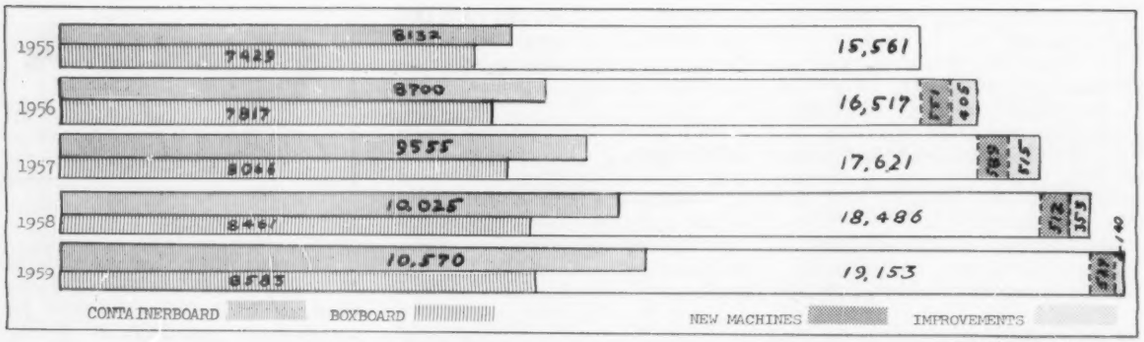
"Half of new North American annual woodpulp capacity of a million tons will be effective during 1957, and the other half during 1958, so the full impact will not be felt until 1958. We can only hope that the prospective increase in world requirements between now and 1958 will justify an expansion of this magnitude. If not, there will be some temporary surpluses, but we do not question the world's eventual need for all the new productive capacity. During the next 20 years, population increases alone should result in a 32% increase in this country's woodpulp requirement" . . . **L. KEVILLE LARSON**, Pulp Sales Mgr., Weyerhaeuser Timber Co.

MUST INCREASE RESEARCH

"The paperboard industry must increase its research expenditures and improve its technical personnel recruitment programs to capture its logical share of the potential market for its products in the next ten years." . . . **LEW BURNETT**, manager of production coordination and procurement, Ohio Boxboard Co.

BIG INCREASE IN BOARD

"A 40% increase in the output of corrugated paperboard by 1965 is a conservative estimate"—**LEONARD M. GUSS**, industrial economist, Battelle Institute, Columbus, O.



National Paperboard Association

PRELIMINARY SUMMARY 1955-1959 — ANNUAL PAPERBOARD CAPACITY BY TYPES (in thousands of tons)

Paperboard Capacity Outlook

National Paperboard Association hears 23% increase in U. S. production capacity is indicated for next 3 years

● Probably one of the hottest discussion topics in 1957 is going to be increased capacity.

Here's what Alvin A. Newburg, statistician of NPA, reported at that association's meeting in New York, on the basis of a preliminary capacity survey undertaken jointly with the American Paper & Pulp Assn. When completed the survey is expected to aid the U.S. Business and Defense Services Administration of the Department of Commerce in determining available capacity in event of emergency.

An increase of 23% in U.S.A. paperboard capacity is indicated in the next three years by these preliminary figures, which reveal that the industry will be able to produce 19,153,000 tons of paperboard at the end of 1959 compared with 1955 capacity of 15,561,000 tons.

Probable increases range from 7% in some grades to 49% in others. Biggest increase: 49% in capacity for special foodboard used in packaging moist, liquid and oil products.

Mr. Newburg said that 1956 capacity figures were on the extremely high side; adding that minor improvement factors will increase capacity figures still further. He said plastics are making a pretty serious inroad on packaging, but other new demands will bolster requirements for paper and board.

The growth trend for the past 30 years, reported Mr. Newburg, averaged 5.1% from 1925 to 1955; less than 3% in 1956. Based on the 5.1% increase, we will have production of 17,600,000 tons by the end of 1958.

Cautioned the NPA statistician: "There is a lot of food for thought here. Study it carefully before you commit your company to more capacity."

GOOD-BY AND GOOD LUCK. JACK R. KENNEDY (left), President of Federal Paper Board Co., Bogota, N. J., and newly elected President of the National Paperboard Assn., exchanges good wishes with retiring President THOMAS N. BLAND, former President of Fibreboard Products. Mr. Kennedy's mill at Bogota, N. J., produces some 125 tons a day of patent coated, single manila lined, bleached manila lined, specialties and folding box grades. Mill has a 115-in. wide 8-cylinder machine trimming 105-in.

New Labor Concepts—Legal Problems

● "How reasonable would today's actuality in growth and diversification of the paperboard industry seem if viewed from the industry's position in 1920?"

Thus did Thomas Noel Bland, retiring president of the National Paperboard Association, indicate to his colleagues that significant changes are in store in the next 30 or 40 years.

Mr. Bland, who also retired as president of Fibreboard Products when it was merged with Pabco Products (now Fibreboard Paper Products Corp.), did not want to make too low a guess on the future. Reviewing his years in paperboard manufacturing, he recalled that in 1920 there were no supermarkets, comparatively little consumer packaging, and today's qualities of printing surfaces, strength, stiffness and grease and vapor resistance were unknown.

He said 1956 was a satisfactory year, despite anxious intervals when customers' internal inventories were built to disturbing levels.

NEW JOINT ACTIONS BY NPA AND APPA . . . Further significant steps have been taken to bring about joint activities by NPA and APPA.

The American Pulpwood Association has been named as official spokesman for the entire industry—including both APPA and NPA—in the field of forestry and will take over collection and distribution of pulpwood statistics for both bodies.

W. S. "Bill" Bromley, executive sec-

retary of APA, reported to NPA member on the future status of pulpwood supplies. His talk is summarized in the PULPWOOD SECTION of this issue.

NPA and APPA are jointly sponsoring a college recruitment program to be headed by a college professor.

First big step bringing the associations together was taken over a year ago in combining their community relations programs.

"Chief executives should give the same attention to industrial relations as they do to sales," urged Colin Gardner III, vice president and general manager of Gardner Board & Carton Co., in making his annual report on industrial relations. He reported that future negotiations are likely to be concerned with a shorter work week, possibly a three-day weekend every other week, and also longer vacations.

NEW INDUSTRIAL RELATIONS CONCEPTS . . . Claude Robinson, president, Opinion Research Corp., Princeton, N.J., presented what one paperboard company president later told PULP & PAPER was a revealing insight on the influence of public opinion on the successful operation of a company Here is the essence of his talk:

More than two-thirds of the general public surveyed believe that labor unions should be regulated.

If a worker wants an increase he should increase his hourly output.

Behavior is motivated not by facts, but by concepts of facts.

The roadblock to management leadership is that workers believe management "doesn't care and doesn't share." Management should develop better ways to show it does.

Man is not motivated by bread alone. He wants recognition, and the opportunity to talk things out and would like to know that management is interested in him as a human being.

He urged companies to use employe publications (80% of companies in the U.S. do) and to adopt a positive approach to labor relations. One "for-instance": When business allowed the designation "excess profits tax" to apply to a tax which should have been called the "82% tax."

Mr. Robinson named Champion Paper & Fibre Co. as an example of a company which uses posters and plant publications to stress that "your company cares" and to prevent wrong interpretations of company actions.

There's a tremendous ideological gap between foreman and top management, warned Mr. Robinson. "If salesmen were as ignorant of management's purposes as foremen are, we would all be broke," he said.

Problems Ahead in 1957— From Reports at NPA Annual Meeting

- **Projected paperboard production capacity (producers were advised to study this report before committing companies to more capacity).**
- **Plastics (they are making serious inroads on packaging).**
- **Industrial relations (producers will hear more about shorter work week and longer holidays).**
- **Traffic problems (freight rate increase may total 22%; demurrage charges to double; metal pallet shipments favored by ruling).**
- **Waste paper (collections urged, as much as storage areas will contain).**
- **Legal problems (legislation to restrict use of additives is disturbing).**

WASTE PAPER PROBLEM IS SERIOUS . . . Henry D. Schmidt, president, Schmidt & Ault Paper Co., York, Pa., reported: "More waste paper was purchased and consumed in the first 43 weeks of 1956 than any other time and will probably set a new record in 1956. An inventory buildup is advisable, he urged. Unusual severe winter ahead will hamper collections. Recent foreign developments are so serious as to make collections important."

"Too few of us realize just what waste paper means to us," he cautioned. "What is needed is a fair price to insure continuity of supply."

"This vital raw material which we have kicked around so long is a serious problem," warned W. H. Beckwith, chairman of the Midwest Consumers of Waste Paper and president of Morris Paper Mills.

OUTLOOK FOR LEGISLATION . . . Malcolm K. Whyte, association counsel to the paperboard industry, reported that federal legislation requiring pre-merger notification of 60 to 90 days, probably will be revised and reintroduced in 1957 and will likely become law in some form.

Mr. Whyte observed that an important decision in 1956 was in the DuPont Cellophane case. "It was decided that DuPont does not have a monopoly because of the 'cross elasticity of demand' for all types of flexible packaging, meaning that a slight variation in price causes substantial changes in product demand.

In the field of labor law, Mr. Whyte noted the case where an employer said he couldn't afford a wage increase and the labor union said "let's see the books." "You are in trouble," warned Mr. Whyte, "if you use this approach in bargaining unless you are prepared to back it up.

Legislation to require pre-testing of "chemical additives" used in the production of foodboard is quite disturbing, he said. Mr. Whyte observed that there may be some further legislation on this subject introduced in the next session of Congress.

ANOTHER FREIGHT RISE? . . . John C. Albert, general traffic manager, West Virginia Pulp and Paper Co., and chairman of NPA's traffic committee said that again as in 1955 the industry faces a railroad freight rate increase. Requested: 15% plus 7% in addition to doubling of demurrage charges. The industry attended hearings in Washington, D.C. on Dec. 15 and will again muster its strength for a hearing on Jan. 8.

Southern railroads, to date, had not joined in the petition for increased rates but there is some indication they may ask up to 7%.

CHARGES DISCRIMINATION AGAINST PAPER . . . A serious prob-

ADLER JOINS ALTON. HARRY S. ADLER (left) has been appointed Assistant to MARVIN W. SWAIM (right), First Vice Pres. and Gen. Mgr. of Alton Box Board Co. A surprise presentation of a watch was made by Mr. Swaim, in his capacity as former NPA President, to Mr. Adler upon his retirement as Secretary of the association after some 23 years, during which he was widely known as "Mr. Paperboard."

	1954 - BY QUARTERS				1955 - BY QUARTERS				1956 - BY QUARTERS			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
PRODUCTION												
Total Paperboard	230.6	239.1	227.1	243.5	255.7	272.3	264.7	281.4	286.1	285.3	253.6	277.9
Containerboard	113.6	123.2	117.3	126.5	128.9	141.7	138.3	149.4	148.0	147.9	135.2	151.2
Boxboard	117.0	115.9	109.8	117.0	126.8	130.6	126.4	132.0	138.1	137.4	118.4	126.7
BOXBOARD BY GRADES												
Folding	45.9	46.1	42.9	45.5	49.2	50.7	47.8	49.9	51.9	52.0	46.2	50.3
Other	39.4	38.3	37.0	41.2	45.6	44.6	44.3	46.4	50.3	47.6	38.0	40.0
Special Food Board	19.5	19.9	18.4	18.8	19.6	22.9	21.9	22.8	22.7	24.9	22.2	23.2
Set-Up	12.2	11.6	11.5	11.5	12.4	12.4	12.4	12.9	13.2	12.9	12.0	13.2
LINERS & CORRUGATING MATERIALS												
LINERS:												
Total	74.3	81.1	76.9	82.9	84.7	93.8	91.4	98.1	96.1	97.6	90.8	101.3
Fourdrinier Kraft	55.9	62.1	59.6	65.0	66.3	74.8	73.1	76.1	76.4	79.4	73.9	82.5
Cylinder Kraft	3.0	3.0	2.9	3.1	2.9	2.8	3.0	3.6	3.3	2.9	3.1	3.5
Jute	15.4	16.0	14.4	14.8	15.5	16.2	15.3	18.4	16.4	15.3	13.8	15.3
CORRUGATING MATERIALS:												
Total	33.9	36.3	35.5	38.2	38.4	41.3	40.8	45.4	45.6	44.1	38.8	44.2
Semichemical	19.2	21.4	21.4	22.5	23.3	25.5	26.0	28.3	28.6	28.8	25.0	28.5
Kraft	3.2	3.6	3.1	3.6	2.8	2.5	1.9	2.1	1.8	1.3	1.5	1.7
Straw	5.1	5.0	4.2	4.4	4.3	4.7	4.8	5.4	5.1	4.8	4.3	4.7
Other	6.4	6.3	6.8	7.7	8.0	8.6	8.1	9.6	10.1	9.2	8.0	9.3
BOX PLANT CONSUMPTION	115.9	119.2	119.4	122.5	129.5	137.0	135.9	137.6	137.1	138.7	135.5	149.4
BOX PLANT INVENTORY	724.0	714.9	703.1	712.9	708.3	693.8	702.7	735.7	890.6	908.6	907.2	---

National Paperboard Association

PAPERBOARD INDUSTRY STATISTICS — 1954-1955 — 44 weeks 1956
(quarters expressed as average week — in thousands of tons)

lem facing the paperboard industry is the free transportation of steel rack containers by the railroads. Recently issued tariff ICC4735 provides for free shipment of numerous household appliances in special metal racks eliminating customary fiber packaging.

Originally applied to shipments from General Motors plants at Moraine and Dayton, O., the tariff is now being extended to other shipping points of General Electric and Westinghouse plants.

At stake is more than 225,000 tons of fiber container used for appliances. The industry contends the shipments of appliances in metal racks at net weight with free return to original shipping point is unfair discrimination. It also is worried that this trend may spread. Total tonnage seen as affected is around 1,000,000 tons.

FILMS AND PLASTICS COMPETE . . . Speaking as president of the American Paper & Pulp Assn., David L. Luke Jr., president of West Virginia Pulp and Paper Co., forecast a 33% increase of pulp production within the next 3 or 4 years and growing competition from films and plastics. "We have a real job of maintaining, expanding and creating new markets for our products so that exterior competition does not encroach too much," he said.

FOODBOARD AND F. K. BOARD GROWING FAST . . . Big growth item is foodboard, which averaged a 7.5% increase for the first 10 months of 1956 compared with 1955. Special foodboard averaged 10,000 tons per week in 1949 (11% of total boxboard production), is now around 23,000 tons per week (18% of total boxboard production).

Another "growth" item is Fourdrinier kraft linerboard. From 1940 through 1945 it comprised 50% of liner production, climbed to 79% in 1955 and now hovers around 81%.

Record Paperboard Production in 1956

● A new all-time high record production year was established in 1956 by the U.S. paperboard industry (as it was also for all paper). The final figure for paperboard was expected to be close to 14,250,000 tons. The previous record, 14,010,000 tons, was set in 1955, so this would be an increase of about 1.7%.

Actually, as of Nov. 24, the National Paperboard Association showed 12,925,000 tons produced at that time (estimated for industry, based on reports by its membership, about 90% of the industry), comparing to a 1955 figure of 12,640,000 tons (actually for one day more in 1955). At that time the 1956 production pace was running 2.6% higher.

This was all the more notable, because a year ago—late in 1955—there was pressure to build up inventories. This has not been the case in recent weeks.

At the National Paperboard Association's annual New York meeting in November, Warren F. Wescott, assistant NPA statistician, reported on trends through ten months of 1956.

Ten months production of 12,075,000 tons was higher than the full year's production for any year prior to 1953. For the first quarter of 1956 the industry zoomed along at the highest production level in its history, averaging some 286,100 tons per week; dropped to 253,600 tons per week average in the third quarter but perked up to 277,990 tons in October.

MERRITT C. THIEM (left), succeeds HARRY S. ADLER as Secretary of National Paperboard Assn. **ALVIN A. NEWBURG** (right) Statistician of NPA, reported a 23% increase in paperboard capacity is in prospect in next three years.

Cylinder kraft has remained about the same over the years; jute is only about 16%. Semi-chemical corrugating materials rose from 22% in the 1940-45 period to around 64% in 1956.

Container board is increasing about 4.6% over 1955, with boxboard up about 1.3%. Folding boxboard now is 38% of total boxboard in contrast to 48% in the 6 year period 1940-45. Set-up boxboard is also dropping. In the six years from 1940 through 1945 it was 16%, is now less than 10%.

Kennedy is New President Of NPA; Harry Adler Retires

NPA represents close to 90% of the paperboard industry with about 120 members (new members: Riegel Paper Corp; St. Mary's Kraft Corp; and Owens-Illinois Glass Co., Inc. through merger with National Container Corp).

Jack R. Kennedy, president of Federal Paperboard Co., Bogota, N. J., succeeds Mr. Bland as president of NPA. Sture G. Olsson, president and general manager, Chesapeake Corp. of Virginia, West Point, Va., and H. L. Wollenberg, president Longview Fibre Co., Longview, Wash., were elected vice presidents. Executive manager is Albert W. Luhrs.

Retiring after some 23 years as secretary of NPA is Harry S. Adler. His successor is Merritt C. Thiem, a native of Sandusky, O., who is also secretary of the Fibre Box Assn.

Spring meeting of NPA will be at The Greenbrier, White Sulfur Springs, West Va., in the third week in May 1957. Fall meeting will be in New York in the second week in November. The Spring meeting, 1958, will be at the Santa Barbara Biltmore, Santa Barbara, Calif.

Thomas R. Lynch, who has been chairman of the National Container Committee of Freight loading and Container Bureau, Assn., of American Railroads, is new director of transportation of the Fibre Box Assiciation and the National Paperboard Association in Chicago.

A native of Ferguson, Mo., Mr. Lynch received his early education in St. Louis and entered the transportation field in 1929 with the Cotton Belt Route.

J. P. Weyerhaeuser, Jr., Industry Leader, Dies of Leukemia at 57

The president of Weyerhaeuser Timber Co., John Philip Weyerhaeuser, Jr., died in Tacoma, Wash., Dec. 8. A grandson of the company's founder, he led his firm through its period of greatest expansion during his nine years as president.

From 1921 to 1933, he served with Potlatch Forests organizations in Idaho, including two years as PFI president. In 1933 he was appointed executive vice president of Weyerhaeuser Timber Co., Tacoma, and in 1947 advanced to president.

Mr. Weyerhaeuser was a leader in the field of forest practices and conservation and had just recently been elected president of American Forest Products Industries.

The company's expansion in the pulp field in recent years under Mr. Weyerhaeuser has been notable. Since the war, new mills have been built at Longview, Everett and Cosmopolis, Wash., and at Springfield, Ore., complementing existing mills at Everett and Longview.

What Dr. Roos Foresees for 1957

• The outlook for the economy in general and paperboard in particular is an annual *piece de resistance* presented to National Paperboard Association members by Dr. Charles F. Roos, president of the Econometric Institute, Inc.

"A number of interesting things have happened since the last meeting," began Dr. Roos. "We now have a conservative middle-of-the-road congress; new situations have developed in the Middle East, Hungary and Poland. Most important from the economic point of view, it seems that the Suez Canal is closed for some time and Europe consequently faces a petroleum shortage. Some 20% of European production is dependent on oil and so a serious problem is presented. Russia has some new problems.

"The new year may be one in which we turn from research and development of new military weapons to production. The United States may freeze designs of missiles, planes, etc. This would mean more business for you because one does not wrap up ideas in packages, but does wrap up parts of products and even whole products. Somewhere around the third quarter greater production of war goods is apt to start.

"The Federal Reserve monetary policy will continue tight, the time depending upon how long people will continue buying machinery and equipment in the face of a declining trend of consumers' goods production. A decline in production of capital goods will pace the business trend in 1957. There would be a consumer anticipation of needs if by any chance we should get into a war.

"A tax reduction in 1957 is not a real possibility. As to wage increases, more are coming next year.

"There are still some strong sections in the economy. The automobile industry has new models and a retail demand near last year's level. Many consumers who normally would put off buying a new car for 3 or 4 months will probably go ahead and buy now because of the war scare. Production of automobiles should equal demand in 1957 and hence production should be higher than in 1958. Inventories are now on the low side.

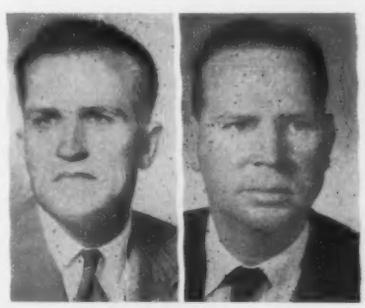
"I see a rise in production of some consumer goods industries. The late date of Easter will help the textile and clothing industries. The food industries should also experience increased demand and production.

"These trends are important to paperboard because two-thirds of paperboard goes to these industries," said Dr. Roos.

"To sum up, there will be a mild inventory correction in paperboard, much of which is already behind you. Levels are not high but normal at present. Not apt to continue. For the short term, there will be inventory rises probably in important sectors of demand, then you ought to do better than you have in recent months."

New Robertson Lab at No. Carolina State College

A new pulp and paper laboratory at North Carolina State College is to be named in honor of Reuben B. Robertson, Champion Paper and Fibre Co. president and board chairman.



Brown Upped at East Texas

R. M. BUCKLEY, President of East Texas Pulp and Paper Co. announces promotion of RAY BROWN (left) to Asst. Res. Mgr. and WAYNE ROBINSON (right) to Acting Pulp Mill Supt. Before coming to Eastex as Pulp Mill Supt. in 1953, Mr. Brown was Pulp Mill Supt. at St. Helens Pulp & Paper Co., St. Helens, Ore. He attended Oregon State College. Born in Fisher, Tex., his first industry job was with Calcasieu Paper. Mr. Robinson, a Georgia School of Technology grad, was previously with Champion Paper and Fibre Co. and came to Eastex in 1954 as Pulp Tour Foreman.

R-W PAPER CO. GLASSINE-GREASEPROOF PAPER MILL, at Longview, Wash., adjacent to Weyerhaeuser Timber Co. pulp mills (left rear) from which R-W receives slush pulp, steam, electricity and water. Note Weyerhaeuser small wood piles.

A SPECIAL FIELD REPORT

Newest Glassine-Greaseproof Unit

Unusual mill pictures and description explain steps in most modern operation at R-W Paper Co., Longview, Wash.

By LOUIS H. BLACKERBY

PULP & PAPER District Editor
Portland, Ore.

● When R-W Paper Co. started up its glassine-greaseproof paper mill at Longview, Wash., last June, it made the world's largest and most diversified forest products production center even more diversified and larger.

The R-W organization, a joint venture of Weyerhaeuser Timber Co. and Rhinelander Paper Co., establishes a precedent for each of the parent firms —the entry into the high-grade paper field for Weyerhaeuser and the first expansion for Rhinelander outside of Wisconsin. Both are outstanding in their respective field: Rhinelander Paper Co., Rhinelander, Wis. (now a subsidiary of St. Regis Paper Co.), is the largest producer of glassine and greaseproof papers; Weyerhaeuser Timber Co., with 10 producing plant sites, is a large producer of market pulp and paperboard and is No. 1 in lumber production.

NEW FIRM "A NATURAL" . . . Formation of the unique subsidiary was a "natural" for each of these widely differing firms. Folke Becker, president of R-W and chairman of the board of Rhinelander, points out that for several years his Wisconsin firm had been considering bringing its products closer to the rapidly growing market of the Pacific Coast. Howard W. Morgan, vice president and pulp division manager of Weyerhaeuser and vice president of R-W, said Rhinelander long had been a Weyerhaeuser pulp customer. Now the required amount of this pulp for the machine at Longview can be pumped in slush form direct to the mill.

The 14,000-ton per year R-W Paper Co. mill was built to serve the rising Pacific Coast demand for protective packaging papers used principally in the retail merchandising of foods.

The company officers are: President —Mr. Becker; vice president—Mr. Morgan; secretary—George S. Long, Jr., secretary of Weyerhaeuser Timber; treasurer—H. E. Nelson, Weyerhaeuser treasurer and assistant secretary—Ruth Neumann. Directors are Benton R. Cancell, Rhinelander president; Atty. Maxwell H. Herriott; Mr. Becker; Mr. Morgan; J. P. Weyerhaeuser, Jr, president of Weyerhaeu-

ser, and Charles H. Ingram, Weyerhaeuser vice president.

LOW SUGAR PULPS HAD TO BE TESTED . . . The creation of R-W Paper Co. was not assured until there were favorable results in tests of 100% western pulps, with their low sugar content, for high grade glassine and greaseproof papers. Months of research were carried on at Weyerhaeuser's pulp division, both Longview and Everett, Wash., and at Rhinelander.

While in the process of forming R-W, the original plant layout was worked up at Rhinelander, mainly by A. E. Teschendorf, assistant chief engineer of Rhinelander Paper Co. About the time of establishing the two-company subsidiary on a 50-50 ownership basis, the layout was submitted to the late Gerald Alcorn, Weyerhaeuser construction engineer, who worked out plant building plans. Consulting Engineer Claude Fargo, of Seattle, collaborated with Mr. Alcorn on the structural steel design, a project calling for designing the steel to fit "the holes" put on the paper at Rhinelander.

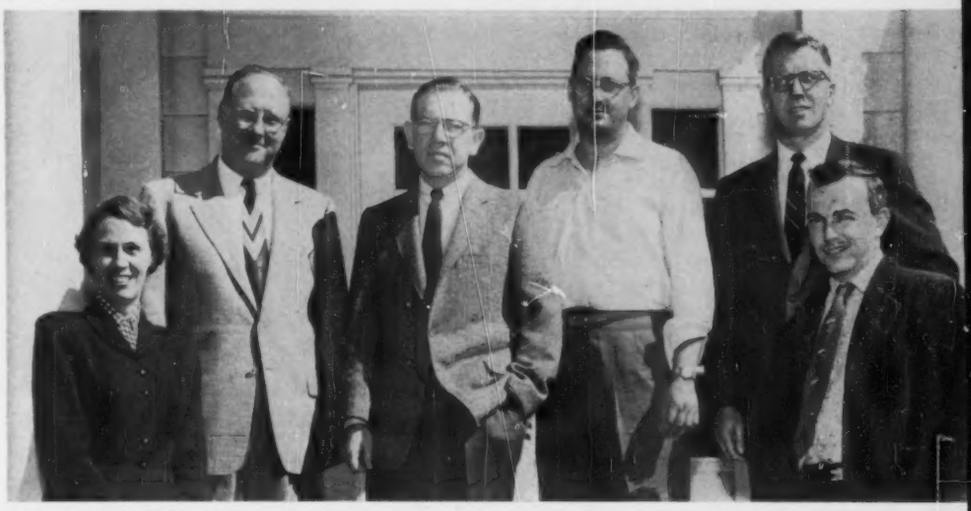
Construction began in January 1955 and the mill was completed close to the original schedule despite a several-month delay in deliveries of major electrical equipment caused by a prolonged strike. The mill, built adjacent to Weyerhaeuser's Longview pulp division area by L. H. Hoffman Co., general contractor, went up in a remarkably short time.

Rhinelander's Chief Engr. Robert Jensen and Asst. Chief Engineer Teschendorf, in conjunction with others on the staff, did the process engineering and Merrill Robison, Weyerhaeuser pulp division project engineer, had charge of building construction.

HOW PROJECT PROGRESSED . . . In January 1955 plans entered the drawing board stage; in February, the site was cleared; in March, piling was driven; in June, erection of steel began; in September, the building was enclosed; in October, installation of steam and stock pipes began; in December, machine erection started. Then, on June 8, 1956, the first sheet of greaseproof was made; three weeks later, machine output was increased to rated capacity.

From Weyerhaeuser comes pulp in slush form. Bleached and unbleached sulfite pulp and bleached kraft are

R-W PAPER CO. OFFICERS AND DIRECTORS (far side of table, l to r): Pres. FOLKE BECKER (Rhinelander Paper Co. Board Chairman), Director BENTON R. CANCELL (Pres. of Rhinelander), Director J. P. WEYERHAEUSER, JR., (Pres., Weyerhaeuser Timber Co.), Vice Pres. HOWARD W. MORGAN (Vice Pres., Weyerhaeuser). (L to r near side): Director CHARLES H. INGRAM (Vice Pres. Weyerhaeuser), Director MAXWELL H. HERRIOTT), Secretary G. S. LONG, JR. (Secretary, Weyerhaeuser) and Attorney DANIEL SMITH.



THE ADVANCE CADRE—all but one from Rhinelander Paper Co.—for constructing R-W glassine-greaseproof paper mill (l to r): LOUISE LOEHR, R-W Office Secretary; ROBERT E. HARPER, who became General Manager of R-W following 23 years with Rhinelander; ARNO TESCHENDORF, Project Engineer in charge of engineering, on loan from Rhinelander where he is Asst. Chief Engr.; RALPH BROUCHOUD, Rhinelander draftsman on loan to R-W as Project Draftsman; HARRY A. HAYWARD, R-W Sales Manager; Plant Engr. ROBERT MUSGROVE, formerly with National Container Corp.

Experience Rhinelander Staff Serves R-W Paper Co.

R-W Paper Co. drew extensively from Rhinelander Paper Co. for key personnel. The highly technical nature of glassine-greaseproof paper manufacture makes staffing with experienced employes even more important than most any other type production in the industry. It calls for stocks and grades distinct from other papers, continuous specialized testing, grades and processing largely peculiar to the G-G field.

Robert E. Harper, general manager of R-W and one of the first to arrive at Longview in conjunction with this organization, has 23 years affiliation with Rhinelander Paper. His titles ranged from chemist to assistant to vice-president to director of purchases—holding this last position when named manager of the new Pacific Coast subsidiary.

Other ex-Rhinelanderites: Chief Electrician George Bixby, Sales Mgr. Harry Hayward, Chief Chemist Richard Nimtz, Finishing Room Supervisor Robert Tanner, Shift Supervisors Henry Stoltz, Richard Jacobson, Douglas Monahan and Norman Beveridge; Scaler Shelby Evelund and Lab Technician Dick Sauer.

Plant Engineer Robert J. Musgrove, formerly with National Container Corp., arrived at the Longview operation shortly after Mr. Harper.

Key Rhinelander plant personnel on loan to R-W for temporary duty during plant erection and/or production start-up included: Chief Engr. R. H. Jensen, who served in advisory capacity; Asst. Chief Engr. Arno Teschendorf, as project engineer; Robert J. Kennedy, asst. paper mill supt. at Rhinelander; Reynold Seidel, rewinder supervisor; John Kay, mgr. of production analyses and services.

pumped a quarter mile through pipes connecting the two mills. Weyerhaeuser also provides water, steam, electricity and sewage disposal for the new operation.

WEYERHAEUSER EXPANDED . . . Considerable engineering and construction also took place in Weyerhaeuser's Longview pulp division during the time the R-W mill was going up. This involved a sulfite plant addition to provide R-W with the types and grades of pulp for producing its glassine-greaseproof papers, expanding the filter plant for an additional 10 million gals. per day, and installing connecting lines for delivering slush pulp, water, steam and electricity a quarter of a mile directly to the new mill.

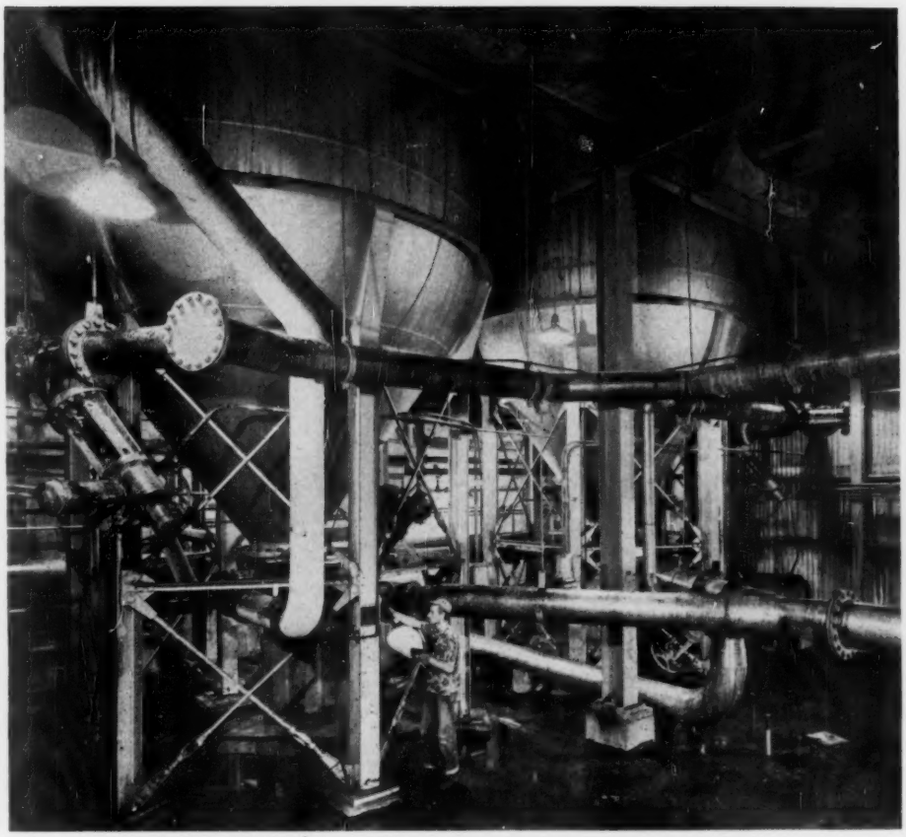
Prime components added to the pulp mill include two Chicago Bridge digesters, made of 1-in. boiler plate and brick lined by Stebbins, for the long-cook Mitscherlich type pulp, screening facilities, bleach plant and 50-ton concrete high density sulfite stock storage tanks, one for bleached and other for unbleached pulp.

The stock goes to Weyerhaeuser's main sulfite screen department and there is processed through a Bird-Jonsson screen, two Appleton Machine Cowan screens and three stages of Bauer Centri-Cleaners, then to an Impco washer.

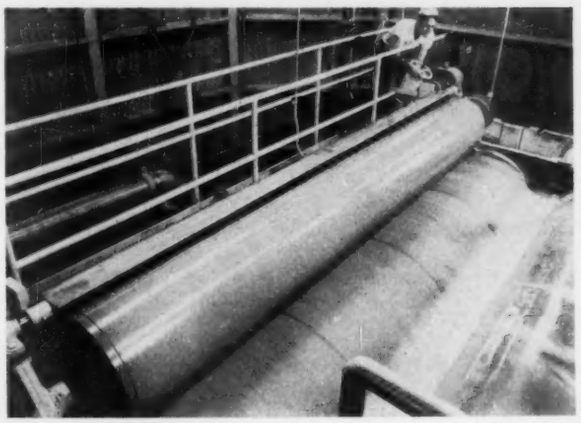
From the washer, unbleached sulfite pulp goes directly to high-density storage or is diverted to the three-stage 30-ton Impco bleach plant addition. Bleached and unbleached sulfite pulps go over Merrick Weightometers enroute to their respective high density storage tanks.

TYPES OF PULP PUMPED TO R-W . . . Two 12-in. stock lines carry glassine-greaseproof pulp from the Weyerhaeuser plant to the R-W mill by underground lines. One is exclusively for unbleached sulfite; the other, in addition to bleached sulfite, also carries bleached sulfate from low density storage (ahead of Weyerhaeuser's No. 2 machine). A Foxboro magnetic flowmeter, immediately behind a consistency regulator at infeed end of the line, measures the quantity of sulfate pulp pumped to R-W. Water comes by underground pipe from Weyerhaeuser, too.

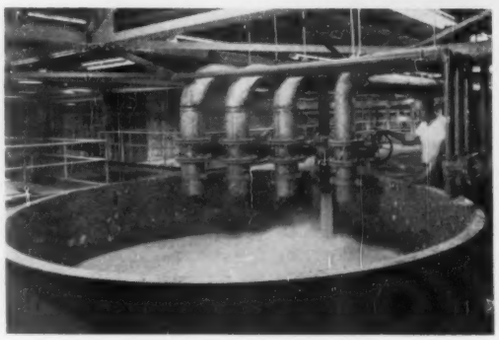
The pulp, pumped from the Weyerhaeuser plant through the pipes at 2% consistency by Bingham stock pumps, goes over an Impco open-cylinder



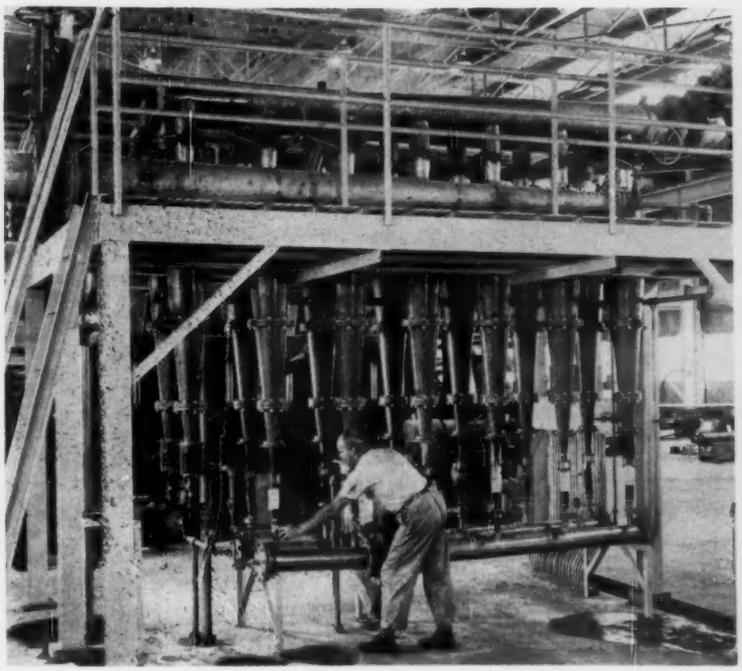
MAKING MITSCHERLICH PULP with Chicago Bridge digester addition installed at Weyerhaeuser sulfite mill to provide R-W with glassine-greaseproof pulp. Digesters of 1-in. boiler plate are brick lined by Stebbins.



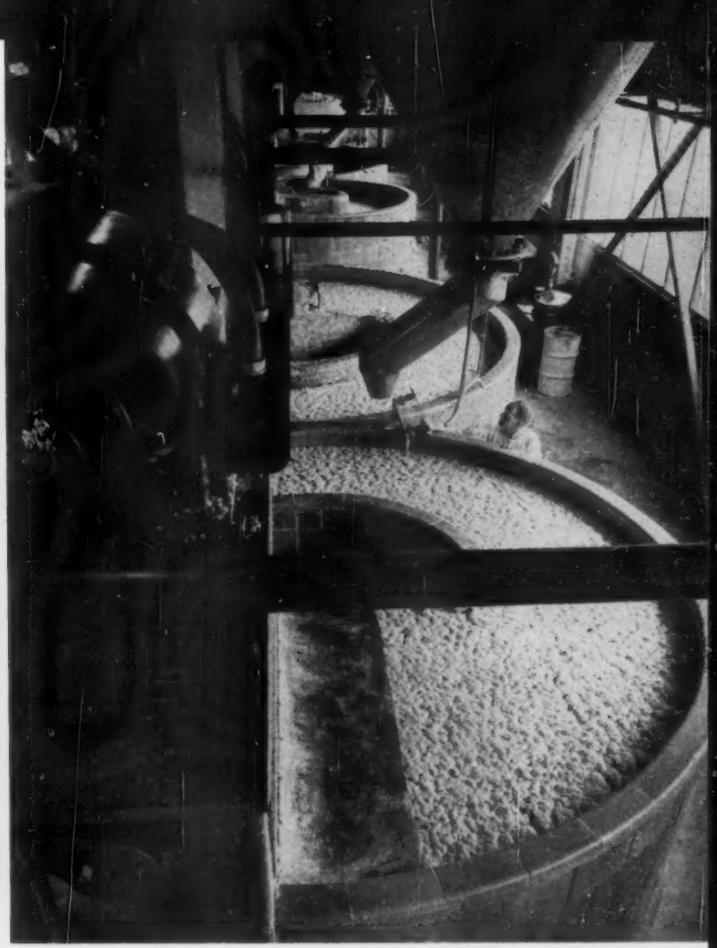
FIRST PULP PROCESSING STEP at R-W Paper Co. Increasing stock consistency from 2 to 6% on Impco open-cylinder decker.



INGREDIENTS AS PER G-G FURNISH in metering tank serving two beaters. Stock measured by Taylor load cell reaches tank via stainless stock lines by Northwest Copper Works, which also built stainless clad metering tanks to R-W specifications.

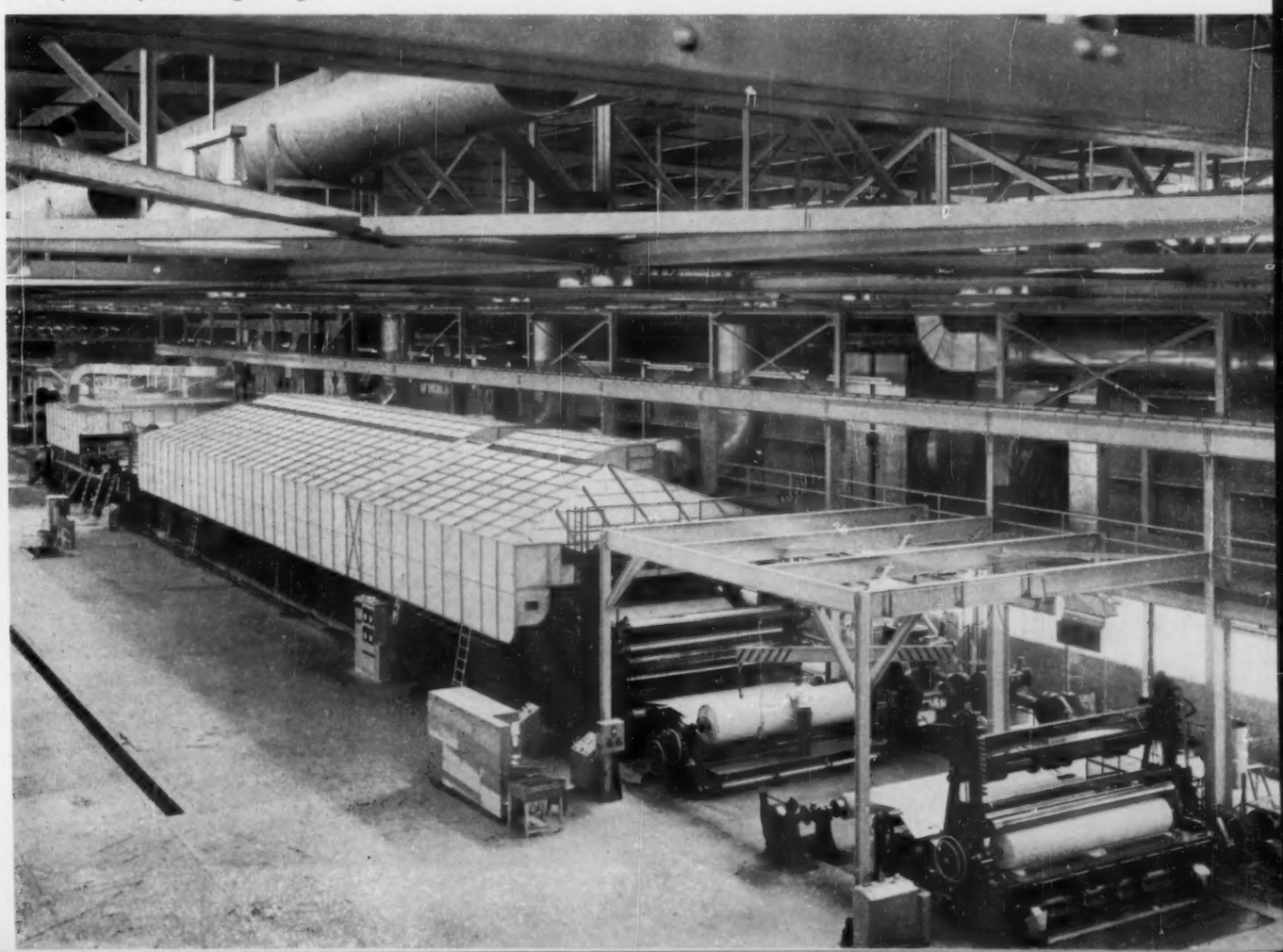


R-W CLEANS G-G STOCK with 14-member battery of Bauer Centri-Cleaners.



FOR HYDRATION R-W uses four E. D. Jones & Sons Bertram beaters, each with Chemical Linings tile tubs and powered by 350 hp Westinghouse motor via Link-Belt chain drive. Beater pairs are served by metering tanks (top right) built to R-W specifications by Northwest Copper Works.

AMERICA'S LARGEST GLASSINE-GREASEPROOF PAPER MACHINE. R-W's 186-in. Beloit Fourdrinier "SOOKUM CHIEF" is 3-in. wider than Rhinelander's famed "BIG SWEDE" at Rhinelander, Wis. Elaborate ventilation system and hoods on Fourdrinier and dryer are by Drew Engineering.



decker on arrival at the R-W mill. Three 15-ton concrete storage tanks receive stock from the deckers at 6% consistency. Each tank is tile lined by Stebbins and equipped with vertical Impco agitator.

BEATER SECTION—HOW IT OPERATES . . . From these tanks, pumps deliver the pulp to either of two beater metering tanks. Thus, the stock enters the beater section for hydration to the required degree.

The R-W refining section consists of four Jones Bertram beaters powered by 350 hp wound rotor Westinghouse induction motors and equipped with Chemical Linings tile tubs of 2,000 lb. capacity of 6% stock. These beaters, duplicating the largest used at Rhinelander, Wis., have lava bed plates and rolls, the latter each weighing 50,800 lbs.

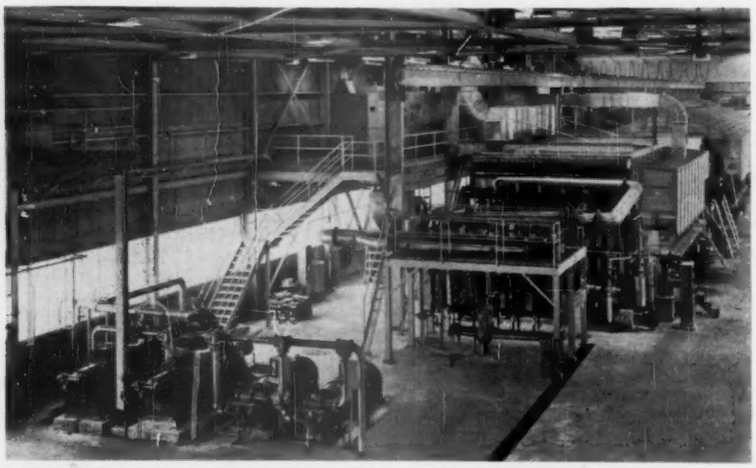
Beater charges are prepared in the beater metering tanks—stainless clad units built by Northwest Copper Works to R-W design and specification—which have capacity for one beater charge.

In making up a charge of stock, pulp is pumped to one of the beater metering tanks in quantities as specified for the specific grade and type of glassine or greaseproof paper to be produced. This pulp comes to the metering unit from the storage tanks and from a 2,000 lb. Morden Slush-Maker. The latter not only repulps the mill broke but also repulps small quantities of unbleached dry sulfate which the company obtains in baled form and uses for making some special glassine-greaseproof papers.

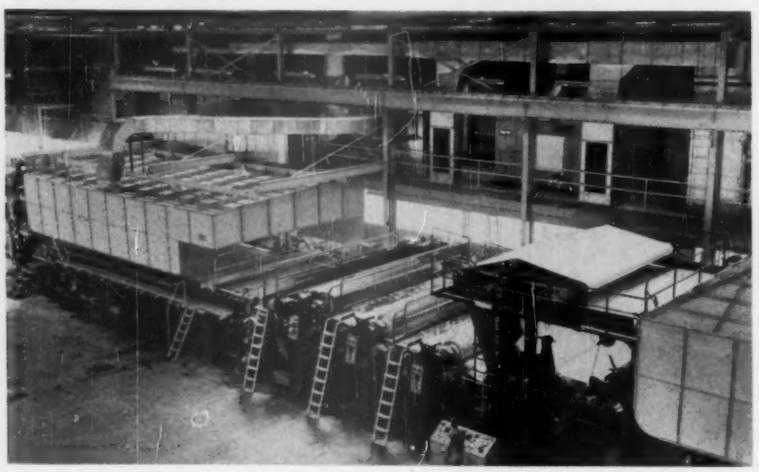
To provide accurate measurement of the various pulps, Taylor load cells weigh stock into the metering tanks. Installed lines tributary to each metering tank include four for stock, made of stainless by Northwest Copper Works, and a water line. Batches of stock are prepared in one of the metering tanks—even to coloring, if desired—for the two beaters tributary to it and the other metering unit serves the other two beaters.

Refined stock from the beaters flows to a Stebbins-tile beater drop chest, equipped with Shartle horizontal propeller agitator, and subsequently through a DeZurik consistency regulator, bringing consistency down to 3% to 4%, to a machine chest. This Stebbins-built tile unit has a Shartle Agi-Flow circulating pump and is instrument controlled for both level and consistency.

A Foxboro control panel, equipped with level, temperature and flow recorders and Esterline-Angus recording wattmeters for four beaters and a Morden Slush-Maker, gives centralized operational control of production up to the machine room.



FOR REFINING AND CLEANING STOCK . . . Two Accru-Set E. D. Jones & Sons Imperial jordans and two Morden Stock-Makers, in left foreground, and battery of 14 Bauer Centri-Cleaners just ahead of the Beloit machine. Stainless piping by Northwest Copper.



BOTH ENDS HOODED. Fourdrinier and dryer section of R-W's Beloit machine has ventilation systems and Transite hoods by Drew Engineering. Beloit press section includes vacuum first press (top roll, Neoprene covered by Huntington Rubber Mills; bottom, Beloit suction roll), second, plain press (top roll, red Stonite by Huntington; bottom, rubber-covered by Griffith Rubber Mills); third, plain press (top roll, Huntington rubber-covered; iron Beloit bottom); fourth, plain reverse press (top roll Huntington white Stonite; bottom Beloit iron), and smoothing press (Huntington rubber on top, iron Beloit bottom).

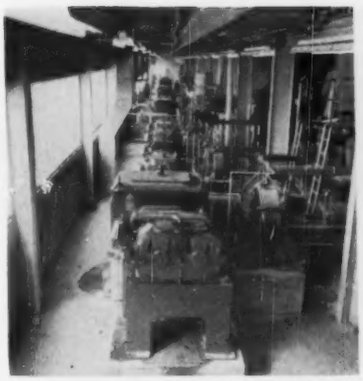
JORDANS AND STOCK-MAKERS—WHAT THEY DO . . . Fine hydrastock with four machines. First are two E. D. Jones & Sons Imperial jordans, each with Accru-Set controls for setting the machines to operate at a constant, controlled power input factor. Two Morden Stock-Makers—widely used for glassine-greaseproof (their greatest single-mill application is at Rhinelander, Wis., where 41 are used) provide the final phase of the stock refining. Westinghouse synchronous motors power each of the four refiners: 200 hp on the Jones jordans and 150 hp on the Stock-Makers.

Flow of the refined stock is to a DeZurik regulator box, then to a Goulds fan pump receiving tray water and suction box water through a fan-pump sump equipped with two Hasco hydroheaters which elevates temperature of the water before it reaches the fan pump. Two stages of Bauer Cen-

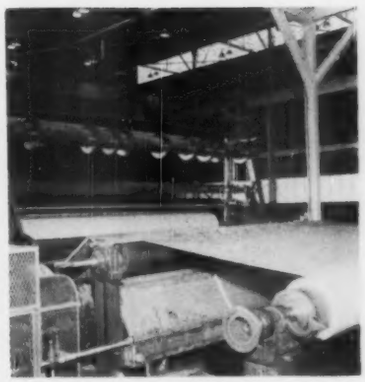
tri-Cleaners clean the stock before it reaches the collector box. The latter delivers stock to a Beloit pressure inlet at desired consistency and temperature. This headbox has a versatile slice which can be moved any direction.

"AMERICA'S LARGEST GLASSINE-GREASEPROOF MACHINE" . . . Built by Beloit Iron Works, the paper machine has a roll-out type Fourdrinier using a wire 186-in. wide by 100-ft. 2-in. long operating over nine suction boxes. Actually, it is only a few inches wider than "The Big Swede" at Rhinelander. The Longview machine, rated at 1200 fpm, has a vacuum press, two plain presses, a plain reversing press and a smoothing press which can also be used for wet-end size additions. Beyond the press section comes a main dryer section of 34 dryer rolls, then a dry-end size press, and an 11-roll dry-end dryer section. There is a total of 45 dryers and 14 felt dryers. All rolls are 48-in. diameter by 192-in face. The machine has four Vickery felt conditioners.

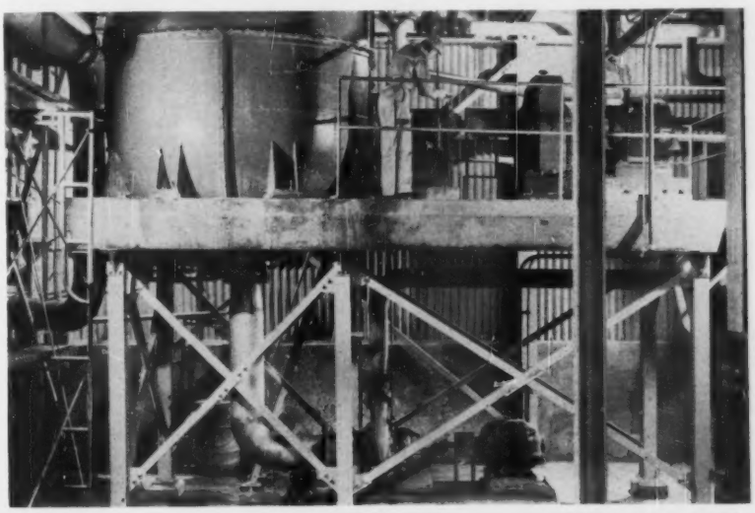
Top rolls of the presses are all by Huntington Rubber Mills, including red and white Stonite, Neoprene and rubber-covered. Bottom rolls of 2nd, 3rd and 4th presses have rubber covering by Griffith Rubber Mills; bottom rolls of suction, smoothing and dry-end size presses are by Beloit. The dryer section, equipped for the high temperatures associated with drying glassine-greaseproof papers, has 26 Vickery Hi-Angle doctors and Ross



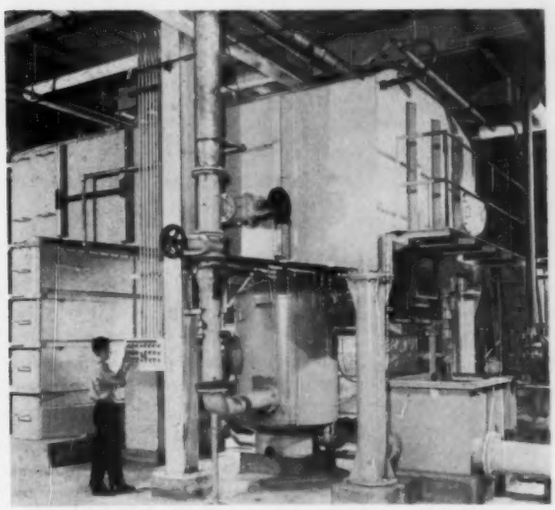
DIFFERENTIAL DRIVE FOR PAPER MACHINE. . . . This is backside of new machine at R-W Paper Co. with Beloit differential drive system using Link-Belt PIV units at each section for variable speed.



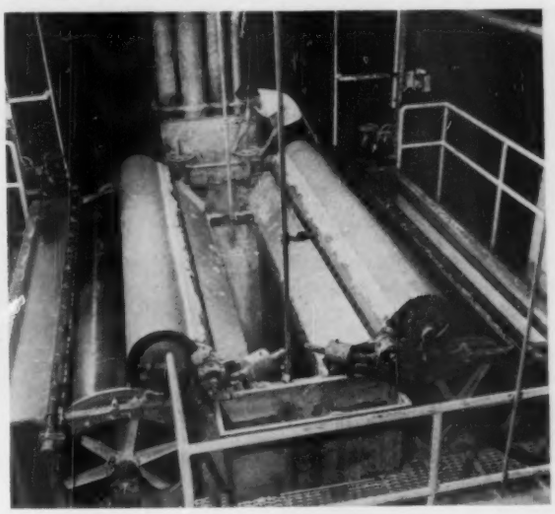
INCREASING MOISTURE in glassine type greaseproof with R-W's Beloit machine dampener applying water from Riedel nylon brush while slitting and winding into rolls on Camachine 19 winder preparatory to supercalendering.



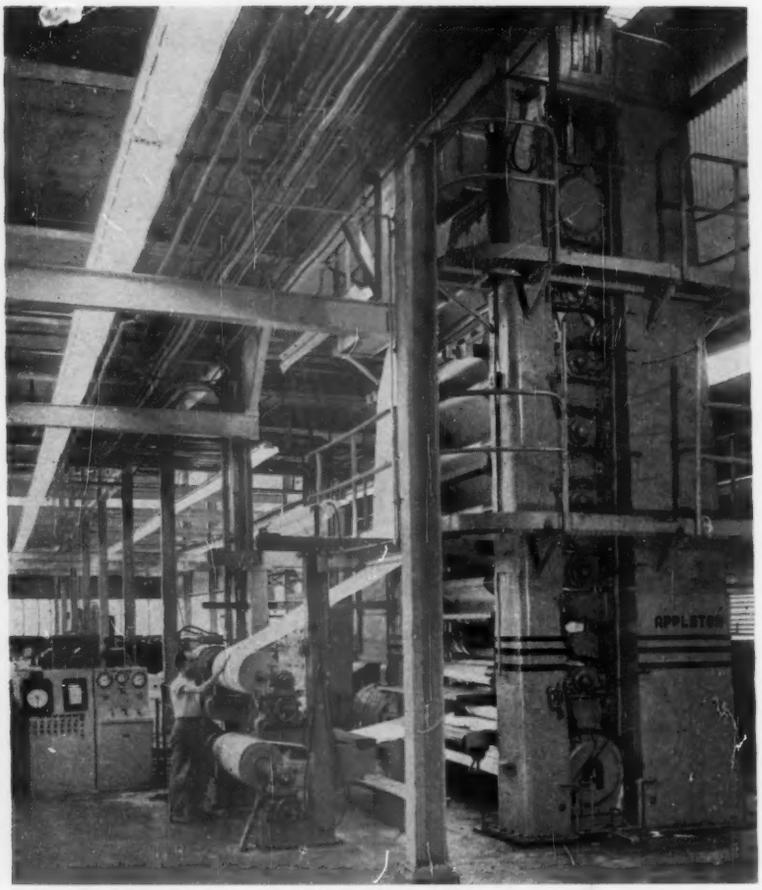
REPULPING GLASSINE-GREASEPROOF BROKE . . . 2,000-lb. Morden Slush-Maker processes broke of entire R-W mill.



RECOVERING FIBER AND SUSPENDED CHEMICALS from seal pit overflow white water with flotation type Savalla saveall at R-W mill.



RECOVERING WHITE WATER FIBER with two Bird savealls, operating back to back, at R-W Paper Co.



MOISTENED GREASEPROOF BECOMES GLASSINE on one of two 16-roll Appleton supercalenders in R-W finishing room. Machine operated by compact control panel at lower left; Tidland lug type expanding shafts on unwind and wind-up.

Midwest Fulton drainage.

A Beloit 9-roll open-face calender stack, with six Vickery Hi-Flex doctors and Beloit reel operate at dry end of the machine. The reel operates either as contact or center-wind type.

Final processing in the machine room is on a Camachine Type 19 winder in conjunction with Beloit machine dampener. Here greaseproof to become glassine is first dampened with water applied by a Riedel nylon bristle brush. Processing of non-glassine greaseproof at this point consists only of slitting to final roll size and winding.

VENTILATION IS IMPORTANT . . . Because glassine-greaseproof stock is applied to the wire at an elevated temperature, thus decreasing water viscosity and consequently increasing drainage, the Fourdrinier section is hood-enclosed and has its own ventilation system. This hood, designed, built and installed by Drew Engineering, serves the dual purpose of holding elevated temperature at the wire, preventing condensation and providing suitable ventilation.

Drew Engineering also provided the dryer hood, a 3-fan exhaust unit; humidity controls and machine room ventilation into which is incorporated an American "Rollamatic" air filter. Both hoods are of Transite construction.

To recover pulp fiber from the white water—other than that returned to the fan pump—the couch pit and wire pit water goes to two Bird saveralls; excess seal pit water is processed by a Savalla flotation type saveall. A Carter plunger pump returns to the system the stock recovered by the Bird units.

FEATURES OF MILL STRUCTURE . . . The R-W mill building, pile-mounted on a site hydraulically filled by river dredge, has structural steel frame, concrete floors and roof, corrugated Transite walls banded all around with two or more tiers of corrugated glass for natural lighting. Stock tanks and roof were slip-form erected.

The mill building was designed and built for housing two machines and their associated processing machinery. Consequently the paper machine occupies but one side of the machine room. The other half is equipped with built-in water and steam lines, and other auxiliaries, ready for subsequent installation of another machine.

The machine room, wholly serviced by a 20-ton Ederer bridge crane, has Westinghouse lighting system with mercury vapor and incandescent overall illumination, the machine area itself tempered for color accuracy.

STEAM AND ELECTRICITY . . . R-W receives 600 psi, 680° FTT steam from the Weyerhaeuser plant via an 8-in. diameter aerial pipe line. A Westinghouse 1,100 hp turbine, powering the machine through a Beloit differential drive, equipped with Link-Belt PIVs, operates on the 600 lb. steam. Remainder of the steam passes through Conoflow reducing valves—two converting from 600 to 20 psi and one to 125 psi. In each case reduced steam goes through a desuperheater, designed by Rhinelander and built by Gunderson Bros. Engineering, Portland, Ore., equipped with Bailey Meter pressure-temperature-flow controls. Main mill headers receive steam from the desuperheaters.

Weyerhaeuser provides 13,800-volt electric power for five main Westinghouse power centers in the R-W mill where the current is suitably converted to meet entire production needs. This also comes by overhead line. One 3,000 kva center converts to 2,300-volt power for supercalenders, beater motors and fan pumps. The other 4 centers provide 550-volt current for nine motor control centers stationed throughout the mill.

FINISHING . . . The finishing room, containing roll floor, supercalender and rewinder rooms, and wrapping section, occupies a 38,400 sq. ft. one-story section of the T-shape plant building which has total floor area of 191,000 sq. ft. The finishing room forms the top of the "T". All greaseproof paper produced on the machine goes down to the finishing room in roll form. There most of it is made into glassine by supercalendering and rewound into market-size rolls.

COORDINATING DAY'S PROGRAM (l to r) Machine Room Supervisor NORMAN BEVERIDGE, Finishing Room Supervisor ROBERT TANNER, Chief Chemist RICHARD NIMTZ.

The entire plant production is processed for shipping in this section and loaded onto trucks, trailers or rail cars.

HOW "SUPERS" OPERATE . . . Two 16-roll Appleton supercalenders process greaseproof paper into gloss,, "more grease-resistant" glassine. One supercalender takes rolls up to 72-in. long and the other to 84-in.

Each of these Appleton supercalenders has a compact Westinghouse panel from which operation is controlled. Instrumentation includes Esterline-Angus recording tachometers and Taylor recorder-controllers for in-roll steam. Each supercalender is equipped with electrical turn-up for threading and has Tidland lug-type expanding shafts— 6in. on wind-up, 3-in. on unwind. Rolls of glassine paper go from the supercalenders to the adjacent rewinding section for final inspection, trimming and rolling to purchase-order specifications. The section consists of three Camachine Type 10 rewinders—two 84-in. and one 72-in.

Two units have Reliance VS drives for automatic speed control ranging from 0 to 2000 fpm, are driven by 20-hp Reliance motors, and have G.E. electric-eye sheet positioning control for precise trimming. The other rewinder has Westinghouse controls and drive. All three machines have 6-in. Tidland expanding unwind shafts.

OTHER UNITS . . . Other processing facilities in the finishing room include a Seybold 84-in. Hydro-Trimmer, a sheet cutter, American "Pacemaker" turning lathe for surface finishing paper-filled supercalender rolls, a D. J. Murray Mfg. Co. air-operated roll header and Toledo "Printweigh" floor scales. Two fork-lift trucks, a Clark and Towmotor (both using LP gas for fuel), handle and transport rolls throughout the finishing room and loading areas.

Becker Retires as General Manager; Continues as Rhinelander Chairman

In an editorial that was intended as a tribute to Folke Becker, PULP & PAPER erroneously reported last month that he was planning to retire as chairman of the board of Rhinelander Paper Co. We regret very much this error. Actually, Mr. Becker is retiring as general manager, but continuing as chairman and director. Benton R. Cancell, president of Rhinelander, takes over the duties of general manager, also.

Mr. Becker also continues, of course, as president of R-W Paper Co., and also a director of both companies. He likewise continues as a director of St. Regis Paper Co., with which Rhinelander interests have been merged.

EQUIPMENT AND CONTRACTOR LIST PERTAINING TO R-W PAPER CO.

Contractors
Hoffman Construction Co.—General Contractors
Electrical Construction Co.
Spechts Paint, Longview

Pumps and Agitators
Goulds (Stock and White Water)
Bingham (Sewer)
Ingersoll Rand
Worthington
Shartle (Agitator)
Nash (Vacuum) (10 of them)
Milton Roy
Carter
Impco (Agitators)

Ventilation Equipment
Drew Engineering (Machine, Finishing and Beater Rooms and Paper Machine)

Dryer Drainage
Ross Midwest Fulton Corp.

Motors
General Electric
Louis-Allis
Reliance (D.C.)
Westinghouse

Power Distribution Equipment
Westinghouse

Motor Control
Westinghouse
Allen Bradley

Turbine
Westinghouse 1100 hp

Valves
1. Lunkenheimer (General)
2. Fabri-Valve (Stock Valves)
3. DeZurik (Stock Valves)
4. RKL (Stock Regulator Valves)
5. Conoflow (Main Steam Reg. Valves)
6. Foxboro (Steam and Water Regulators)
7. Fisher (Steam and Water Regulators)
8. Mason Neilan (Steam and Water Regulators)
9. Hasco

Piping
Northwest Copper Works
Alaska Copper

Metal Tanks
Northwest Copper Works
Beall Alum and Hot Water Tanks

Tile Tanks
Stebbins Engineering

Beater Tubs
Chemical Linings

Paper Machine
Beloit Iron Works (186 in.)

Winder and Rewinders
1 Cameron type 19
3 Cameron type 10

Supercalenders
Appleton Machine Co. (72 and one 84 in.)

Core Cutter
Appleton Mfg. Co.

Suction Box Grinder
Eastwood Neely

Air Compressor
Ingersoll Rand

Broke Baler
American Baler Co.

Fans and Blowers
Drew Engineering Co.
American Blower (Ventilation)

Repulper
Morden Slushmaker

Refining Equipment
4 Jones Beating units
2 Jones Imperial Jordans
2 Morden Stock Makers

Savealls and Thickeners
2 Bird Machine Co.
1 Impco
1 Savalla Saveall (Leje & Thurne, Stockholm, Sweden)

Elevators
2 Five-ton S. Heller Elevator Co.

Lathe
American "Pacemaker"

Sheet Trimmer
Seybold

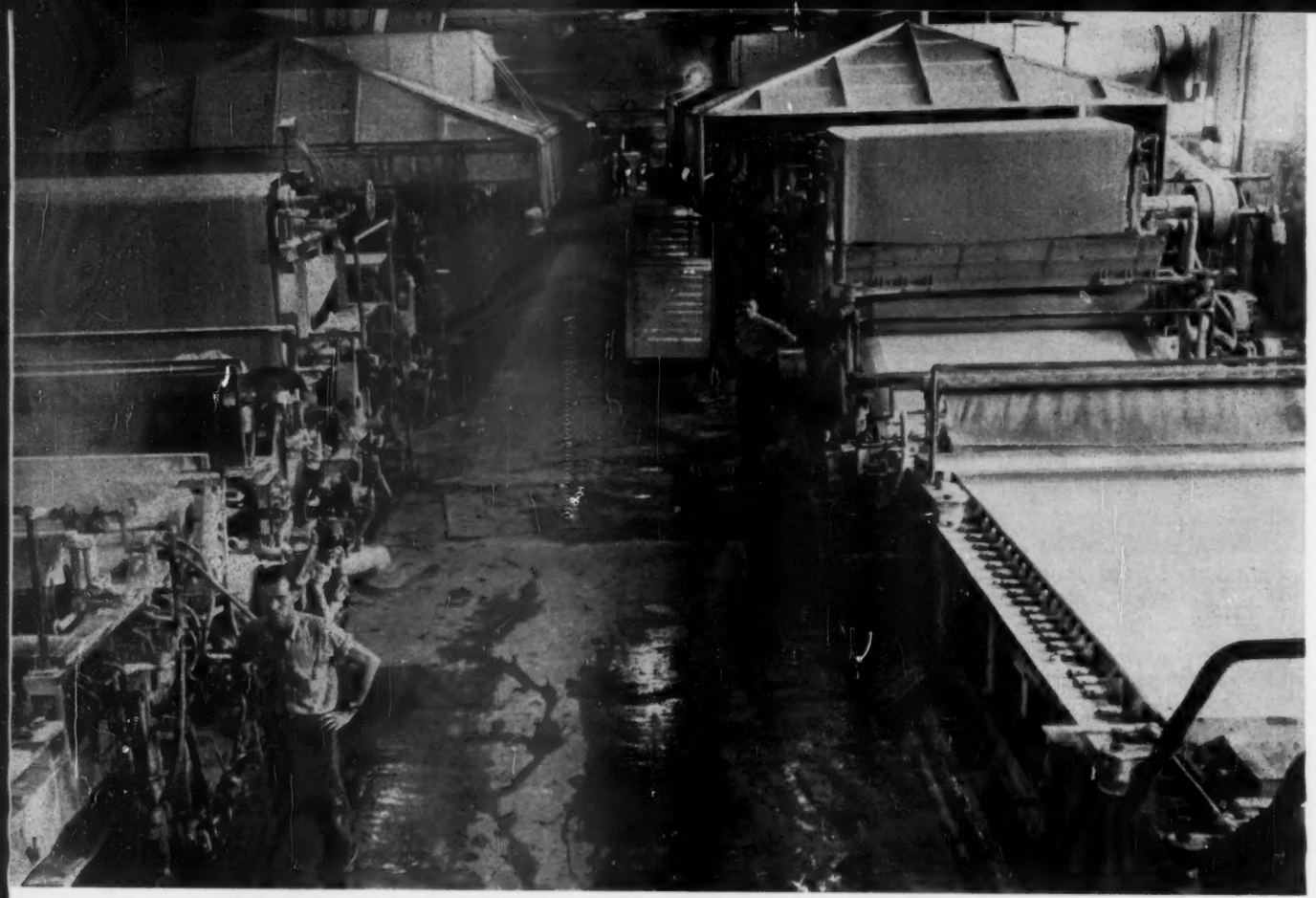
Stock Cleaning Equipment
Bauer Bros. Centri-Cleaner (14 units)

Consistency Regulators
2 DeZurik

Gear Drivers
Falk
Westinghouse

Insrumentation
Foxboro
Bailey Meter Co.
Taylor
Esterline Angus
Minneapolis-Honeywell

Scales
Toledo



PULP & PAPER'S WIDE ANGLE CAMERA CAPTURES NO. 2 AND NO. 3 MACHINES in Standard's No. 3 paper mill, Richmond, Va. No. 2 has new size press, No. 3 new couch and suction rolls. Both have new 2400 gpm Warren fan pumps and Stickle moisture controls. No. 2 is a 102 in. Moore & White machine, and No. 3 is a 120 in. Rice Barton machine.

A PULP & PAPER FIELD REPORT

How Standard Doubled Production

In 5 years, Richmond's fine paper mill has boosted capacity from 50 to 100 tons a day. The secret: Modernization

● In the South, a land of 800 and 1,000 ton-a-day kraft giants, it is a novelty to find a mill which proudly boasts that it has doubled production over a period of the past five years from 50 to 100 tons a day. That's the record made by Standard Paper Manufacturing Co. which has been producing fine papers at its double mill in Richmond, Va., since 1902.

One of the few fine papermaking companies in the South, Standard's small mill could fit into the corner of some of the gigantic kraft mills in Dixie. Its No. 3 mill is practically hidden by a gigantic new grain silo nearby. But size has nothing to do with this operation—in its own way, Standard is somewhat of a giant. Its book and offset papers, bristols, indexes, ledgers, matrix, blotting and sulfite specialty papers are known the country over for their fine quality.

The past few years have seen a steady change taking place here. Loosely termed a "five year plan" of modernization (five years seems to be a standard improvement plan time these days), the gradual face-lifting at Standard has actually been going on since the forties. It is not an easy task to change a mill which specializes in this type of product. Like winemakers or glassblowers who have been using the same equipment for years to turn out vintage wines or priceless glass products, fine papermakers, too, are reluctant to change their ways.

"TAKE THAT OLD BEATER THERE" . . . said one technician, "It's been whipping up beautiful pulp for years. It just won't turn out a bad batch. If we traded that in on a new model it's hard to say what might happen!"

He was referring to one of two beaters which have been in operation in Mill No. 1 since it was built, two

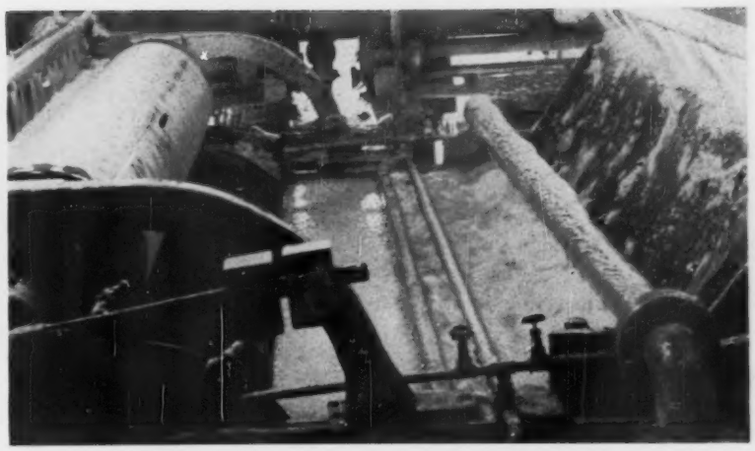
FINE PAPERMAKING IS AN ART AS WELL AS A SCIENCE. At Standard Paper Mfg. Co. in Richmond, Va., methods and ideas had changed little in 50 years. Then the "brass" took a look around and decided to give the mill a new look. The result was smoother operation, double production, higher quality, a new product. Here's how they did it.

years after the century turned. It might be said that 52 years of gleaming white pulp are encrusted in its cracks and crevices. But Standard is a paradoxical combination of old and new. Its beaters may be half a century old, but the Dynapulpers right behind them are spanking new. Its paper machines may date back to the twenties or before, but they are equipped with the latest instruments and devices for quality control. This is the combination Standard's top men are using to meet increasing demands and to improve the quality of their sheet.

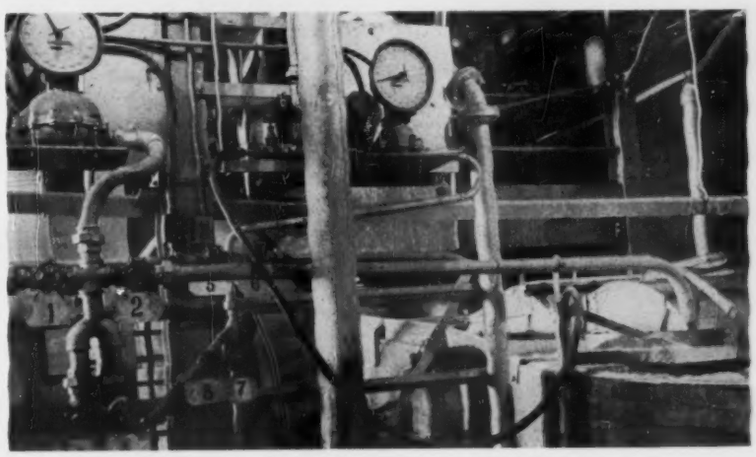
Standard has taken a few hard licks in its time but it has emerged unscathed. It came through the depression breathing hard, but still breathing, when some of its more austere cousins took the count; in 1938, the unpredictable St. James River nearby went on a rampage and water stood three feet deep in the machine room . . . three weeks later with the river bottom shoveled off the floor, the bearings dried out and motors cleaned, Standard was back in business; a wayward hurricane once blew off the roof of No. 3 mill, but the machine hardly lost a day. The company started as a blotting paper manufacturer but by 1920 when No. 2 machine started up, it was also producing text and matrix papers. No. 3 machine appeared on the scene in 1928.

MEN BEHIND THE WHEEL . . . The changes which have zoomed production at Standard were a result of top management's decision to break a few bottlenecks and grease some of the age out of the mill. Much credit is due to Harry Deffew, vice president of the company until last July, when he retired. Howard S. Donald, president, Graham Carlton, vice president, and W. Bryan Taylor, treasurer, sparked the "five year plan." Many of the decisions, however, were prompted by longtime Standard veteran Fred Hazelwood, supt. of No. 1 mill, and by Earl Gaudet, bright young Bostonian and youngest of the firm's V.I.P.s, who heads Mill No. 3 and has inspired many of these changes. (Mill No. 2 is now a warehouse.)

Among other things, all three machines were rebuilt and modernized, the finishing room was overhauled and redesigned for smoother flow of materials, a new boiler plant was added to provide increased steam, the entire deinking system was revitalized, screen and pump facilities throughout the mill were replaced with new equipment, chests were tile-lined, and three Rice Barton Dynapulpers were added to increase quality and to insure a more continuous flow of pulp to the machines.



TWO 25-TON LANCASTER WASHERS are used to wash stock after it goes through Jonsson screens. From here stock goes to Impco screens, then bleach tower, followed by second line of Lancasters.



CONTROLS FOR 8 OF 13 BEATERS can be seen in this picture of meter room, where stock is fed to beaters from new Stebbins tile-lined chests.

FIRST STEP IN DEINKING PROCESS takes place here, where pulp goes through four screening levels in Bird Jonsson screens.

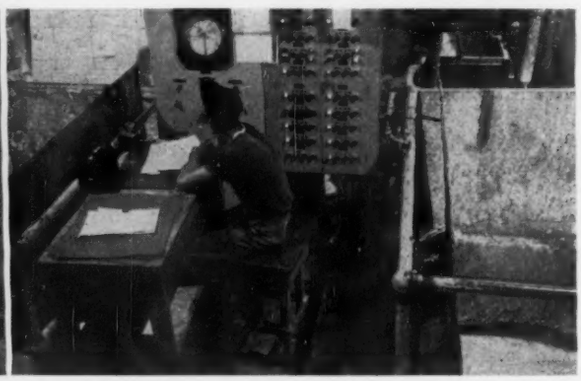
NEW DOWNINGTOWN FOURDRINIER SECTION on No. 1 machine is shown here operating at 40 fpm—so slow you can see sheet forming.

AGITATOR IS STILL WHIRRING in bottom of new Dynapulper, in picture at left, taken by PULP & PAPER just a moment after last fiber of pulp was drained from 1,500 lb. capacity machine. At right is new double-back stand in finishing room designed by company engineer HORACE SMITH, with help of ED FRIDLEY. Six rolls of paper can be loaded into machine and insure continuous run through Clark cutters.

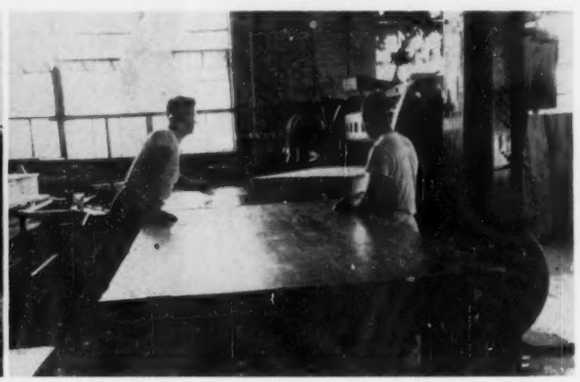
THE MACHINES GET AN OVERHAUL . . . One of the first items on the agenda for modernization at Standard was the 90 in. Moore & White No. 1 machine, which trims out at 80 in. In operation almost since the mill started up, No. 1 was badly in need of a new face. A new Downingtown Fourdrinier section replaced the old one and a new Valley inlet was added. In the dryer section, a new Downingtown size press was put in, 19 dryers were added in a long section and four in a short section. A Downingtown suction press roll was installed. And a new Syco drive boosted machine speeds.

Two years later in 1953, work was started on No. 2 and No. 3 machines. Stickle drainage units for moisture control were added to all three machines. The 102 in. No. 2 Moore & White machine got five new dryers and was equipped with a new 2400 gpm Warren fan pump and a four in. Nichols Vortrap section.

Bird savealls and consistency regulators were added to both No. 2 and No. 3 machines and the Roberts filtering system on No. 2 was rebuilt. With work on No. 2 completed, attention was next focused on No. 3. A 2400 gpm Warren fan pump was installed as the first step in upgrading this machine. Its Vortrap pump was speeded up and two more Vortraps added.



CONTRAST OF OLD AND NEW METHODS used at Standard is clear in these two pictures. At left, one of two 52-year-old beaters made in 1902 and still in use in Mill No. 1. At right, two No. 8 Rice Barton Dynapulpers, one of which can be seen in action at right, have latest type Bristol control board.



ANOTHER "HOW-TO-DO-IT" STORY at Standard mill is at Seybold trimmer, where a father and four sons work as a team. Paraffin wax is spread over top and bottom sheet of each pack of paper before it is put through trimmer (left). After trimming, waxed sheets enable heavy bundles of paper to be slid easily to men who load it on pallets (right).

In 1955, overhaul on No. 3 was completed. The 120 in. Rice Barton machine was equipped with a 24 in. Downingtown suction couch roll and Dowingtown suction first press roll.

HOW FINISHING ROOM WAS CHANGED . . . In 1953, work on the finishing room, located in No. 3 mill, was also initiated. At the same time, machinery was relocated in No. 1 and No. 3 mills to consolidate all manufacturing activities in two instead of three mills. No. 2 mill became a storehouse. Two Dorr-Busch embossing machines were moved into No. 3 mill and the Norwood supercalender was set up in No. 1. Machinery in the finishing room was rearranged to give workers there more elbow room. A double back-stand system, designed by Mechanical Engineer Horace Smith, which permits the loading of several reels of paper while one is being finished through the Clark cutter, was installed. Six reels are loaded on the machine and fed consecutively through the cutter. The finishing department was also equipped with a 100 in. hydraulic Seybold trimmer. Work has now begun on a 25,000 sq. ft. extension to provide more finishing space as well as shipping facilities adjacent to the finishing room.

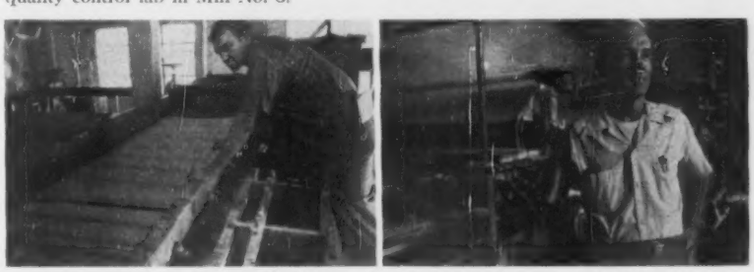
DEINKING SYSTEM ALSO CHANGED . . . As part of the improvement plans, the deinking system at Standard also was in for a few changes. Most important was the addition of two 12-plate Impco screens, installed after the first washing cycle. Flow was altered and at present, deinked stock goes from the beater through a Jonsson screen, then over two 25-ton Lancaster washers to the Impcos. From the Impco screens, stock passes over a third Lancaster washer, then flows to the bleach tower where it is subjected to sodium hypochloride treatment for five hours. After bleaching it passes over a Lancaster bleach washer and is stored in a Stebbins chest with Warren Agroflow pump, then metered to beaters.

DYNAPULPERS SPEED UP OPERATION . . . A significant change in the operation at Standard was the installation of three Rice Barton 1,500 lb. No. 8 Dynapulpers. Equipped with 200 hp motors, the pulpers were installed behind the 13 beaters. This insured faster defibering of purchased pulp and also enabled the mill to get more beater time. By insuring a more continuous flow of pulp, it provided the necessary increase in pulping to meet the added demands of the machines. These Dynapulpers also cut labor costs in the beater room considerably.

TOP BRASS AT STANDARD. Left to right are H. S. DONALD, President of Standard Paper Mfg. Co.; G. A. CARLTON, Vice Pres.; HARRY DEFFEW, retired Vice Pres. and longtime Supt. of the company; W. BRYAN TAYLOR, Secretary-Treasurer.

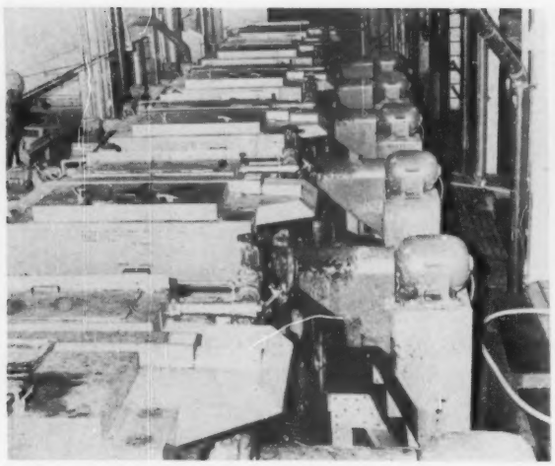
THEY HELP STANDARD DOUBLE PRODUCTION. EARL GAUDET (left), Supt. of Paper Mill No. 3 and the man responsible for many of new ideas put into operation in past few years; FRED HAZELWOOD, a veteran Standard papermaker, Supt. of No. 1 Mill, in charge of company's oldest paper machine, which sometimes runs at 40 fpm.

ED FRIDLEY (left) heads finishing room, recently expanded and redesigned for more efficient operation. Behind him are a brace of Clark cutters, operated by women at Standard. LOUIS ROTHSCHILD (right), Chief Chemist, checks the sheet in new quality control lab in Mill No. 3.



SUPT. JOHN HARRISON (left) checks new 12-plate Impco screens in deinking room, before reclaimed stock goes to bleach towers. Screens were part of modernization. JIM TURNER (right) is another veteran fine paper maker, Asst. Supt. of Mill No. 3.

OTHER CHANGES CALLED FOR . . . In its modernization plan, Standard has also made other changes necessitated by the upgrading of paper and the increase in production. A new 45,000 lb. boiler was installed and a new boiler plant to increase steam production even more is slated for the near future. All chests in No. 3 mill were tile-lined by Stebbins Engineering & Mfg. Co; two Sinclair size tub starch straining screens and a 125-mesh Tyler trimmer screen for the clay stem were installed. Through the mill, pumps and other accessory equipment have been installed to keep pace with the changes.



WHERE SCREEN PERFORMANCE WAS IMPROVED . . . These Lindblad screens at Weyerhaeuser mill for unbleached kraft stock, posed problems until some changes were made.

NEW ORLEANS SPEAKER—AND TWO ENGINEERS WHO DID MUCH OF THE WORK . . . Collaborators in improvement of screening performances at Weyerhaeuser's Everett, Wash., kraft mill (left to right): L. G. (GERRY) WILLINS, Supt., Everett Kraft Mill, who gave paper; C. L. (BILL) CARNS, Plant Engineer, who was Asst. to late Gerald Alcorn, Construction Engineer, during mill building; and WILLARD E. OSBORNE, Pacific Coast Engineer and Representative for Improved Machinery Inc.

How Kraft Mill Improved Screening

What Weyerhaeuser tests proved with Lindblads and how improvements were made in their performance

● When you combine pulp made from relatively new species of wood—as is being done in so many mills today—with comparatively new equipment, the results are not always "according to Hoyle."

Weyerhaeuser found this out at its market kraft pulp mill in Everett, Wash., which was built in 1953—first pulp mill in the world without a woodroom. Not a single additional tree was cut to supply it, for its raw material is sawmill chips, mostly Douglas fir.

AT NEW ORLEANS . . . H. Y. CHARBONNIER (left), Chairman of the Alkaline Pulping Conference. He said the next meeting, this coming November, will be at Charleston, S.C. "Charb" is Mill Mgr. for Union-Bag-Camp Mfg. at Savannah. T. C. BANNISTER (right) a new Mill Mgr. in the Southern industry, was also at New Orleans. He recently was named Mgr. of the Bowaters Southern "Catawba" mill which will be built near Rock Hill, S.C. He moves up from Kraft Supt. at the Calhoun, Tenn., Mill.

Seven Swedish type Lindblad high intensity screens act as primary screens after washing. They are space savers, low in power needs, act like a flat screen "rolled up," one engineer said. But there were large variations in screening rates, depending on wood species. A similar battery of Lindblads is used on bleached pulp at Everett.

Now—some three years later—Weyerhaeuser has finally solved its problem after one of the most exhaustive research and engineering investigations of screening.

Gerry Willins, superintendent of the mill, who went west from Oxford Paper, told the story in a paper presented before the TAPPI Alkaline pulping meeting in New Orleans in mid-November. At its conclusion he was surrounded by mill men having screening problems, requesting copies of the Weyerhaeuser research. Weyerhaeuser made many mechanical changes—how they will work in other mills, with other species, Mr. Willins couldn't say.

Stock flows from a DeZurik regulator to surge tank, to constant headbox ahead of the Lindblads. Since PULP & PAPER published the full story of the Everett mill layout and processes, a Cowan screen was added as a secondary screen after the Lindblads, and then stock goes to Impco flat screens.

DIFFICULT SCREENING . . . When 100% Douglas fir was pulped, screening was most difficult. When 70% fir and 30% hemlock were mixed it was easier. Various slot sizes and types of plates were tested. Chrome plates (6 x .014 in.) increased the rate over stainless steel. At 4 rpm basket speed, 6 x .014 chrome gives a 41% increase on 100% Douglas fir with no increase in per cent of shives. Of the increase, 25% is due to chrome plating, the other 16% is due to six cuts, as compared to 10 cuts per inch.

Increasing the basket speed from 5 rpm to 20 rpm increases the screening rate from 20% to 28% with various plates. At 20 rpm the accepted stock consistency is about 0.2% higher. With 6 x .014 in. chrome plates at 20 rpm, a total increase of 70% over 10 x .014 in. stainless steel plates is obtained on 90% to 100% Douglas fir.

The Lindblads should have close vat level control to obtain the maximum rate, he said.

If 25% or more of hemlock and/or cedar is mixed with the Douglas fir, the screening rate will be increased

TWO HOSTS GREET A GUEST . . . Industrial Chemicals Division of Olin Mathieson Chemical Corp. gave cocktail party for 500 delegates to Alkaline Pulping Conference. Here, VERNON WOODSIDE (left), Olin Mathieson Dist. Sales Mgr. in New Orleans and Conference Chairman for Local Arrangements, and DERIK RICHARDSON (middle), Sales Mgr. of the Division, headquarters in Baltimore, are greeting DR. DONALD T. JACKSON, Technical Director, Hammermill Paper Co. Principal host at party—not in the picture—was JOHN O. LOGAN, Vice Pres. and Gen. Mgr. of Olin Mathieson's Industrial Chemicals Division.

"AT PAPER WEEK, WE WILL MAKE A START . . ." K. O. ELDERKIN (middle), President of TAPPI and Vice Pres. and Gen. Mgr., Bowaters Southern, told Alkaline Conference that in New York in February pulping technologists "will make a start" toward defining what qualities they want in trees of the future. Forest geneticists want to know. Here Mr. Elderkin talks with VANCE P. EDWARDES (left), of Corinth, N.Y., Pulp and Paper Consultant, Soda Products Div., Diamond Alkali Co., and for many years a sulfite pulping specialist; and with DR. JOSEPH ATCHISON (right), Parsons & Whittemore-Lyddon Organization, New York, builders of bagasse, straw and other vegetable fiber pulp mills.

LOUISIANA WELCOMES A NATIVE SON . . . From the North came W. E. ERICKSON (left), Kraft Mill Supt., The Northwest Paper Co., Cloquet, Minn., and BRUCE MARTIN (right), Vice Pres. in charge of Mfg., The Gardner Board & Carton Co., Middletown, O. But for Mr. Martin, it was "back home again"—he was born in Baton Rouge and graduated from Louisiana State University.

GAYLORD CONTAINER ENTERTAINS . . . Delegates to New Orleans meeting bussed to Gaylord Container Corp. division, Crown Zellerbach Corp., where they toured plants and were treated to woodlands "Chuck Wagon" luncheon brought all way from Fort Worth, Tex., on motorized "wagon." Gaylord hosts included (l to r): DAVID STRONGFIELD, Asst. Traffic Mgr.; GEORGE PURVIS, Industrial Engineer, Containers Division; WILBUR F. GILLESPIE, General Manager of all Gaylord operations, and A. G. ROOT, Asst. Works Mgr., who arranged for importing the Western style feast, cooked while en route from Texas.

13 to 30% with 10-cut stainless steel plates; about 10% with 6-cut stainless steel plates. But with chrome plates, the 100% Douglas fir screens nearly as well as a mixture.

Feed consistency between 2.0% and 2.5% has little effect on the screening rate. Stock P.B.C.'s between 8 and 11 seem to have little effect on the screening rate. A P.B.C. of 13 is harder to screen.

The percent of shives in accepted stock depends on the screen slit width and the percent of shives in the feed. Stainless steel and chrome plates with equal slit widths pass an equal amount of shives.

Reject dilution near the reject orifice should not be used if there is no overflow, as it causes a small loss in throughput plus a buildup of shives in the vat.

The external shower should strike the basket nearly tangentially and on an exposed surface. The shower should sweep the stock toward the reject and overflow area. Full pressure on the internal shower is best.

MECHANICAL CHANGES . . . The changes made at Everett now are being incorporated in new Lindblads being built. They aided operation and maintenance, but had no direct effect on screening rate. New Lindblads have a mercury chamber to change the throw on the vibratory screen, which otherwise was fixed with concentric weights.

Mr. Willins said these were other important changes made at Everett:

Three overflow slots, 5 in. high, 6 in. wide, were cut on discharge side of vat to facilitate maintaining a constant level and to provide additional stock for secondary Cowan screen. Slot bottoms are 10 in. down from the top cover.

Equalizing oil lines between outboard bearings were removed and plugs installed. Better lubrication of bearings has resulted.

Hard rubber seals were replaced with soft rubber to give better sealing. Laminated seals are being tried now. Laminations are parallel to seal face.

Hydraulically-loaded end seals were

replaced with spring-loaded mechanical seals to get better sealing. Previously, any drop in water pressure would admit unscreened stock through the seals into accepted stock.

Integral stainless steel seal faces are being replaced with removable faces to facilitate maintenance on the faces.

Isomode rubber vibration dampening pads were installed under the yoke supports. These show promise of reducing vat vibration.

The screens came equipped with highly loaded eccentric weight bodies on the high speed shafts to impart vibration to the screen basket. Experience at other mills showed this high loading was excessive, as the vibration produced caused much breakage and high maintenance. Weights in Lindblads at Everett were reduced in mass so as to reduce the intensity of basket vibration.

Other Highlights from New Orleans

HOW PINE SPECIES MEASURE UP . . . A careful study of six pine species made by Champion Paper and Fibre Co. revealed one rather surprising fact: Differences in such things as wood density, pulp yields, strength, etc., are greater within species of the trees than differences among these species.

A kraft pulping and bleaching study was performed on longleaf, slash, loblolly, white, shortleaf and Virginia pines. The most important wood characteristic influencing or relating to pulp characteristics was wood density. Only limited differences were found in the ease of pulping, yield or viscosity among these six types. Differences were found, however, in pulp strengths and those related to density of wood.

High density wood was closely related with those trees which had a high summerwood content. From these came a pulp which produced a sheet with high tear strength and bulky low density while low density wood with high springwood content gave a sheet with high mullen, high fold strengths and high density.

WHAT EFFECTS REVERSION OF BLEACHED PULPS? . . . Since the trend toward higher brightness has been on the increase, investigation in reversion variables was carried out by staffs of the Institute of Paper Chemistry and Union Technical Service Laboratory, Shell Chemical Corp. This experiment was performed on a single Southern pine kraft pulp bleached to 76.6% C.E. by conventional 5-stage process—chlorination, caustic extraction, sodium hypochlorite oxidation, caustic extraction and another stage of sodium hypochlorite. The four variables studied were temperature, time, pH and hydrogen peroxide concentration.

Over the respective ranges of normal operation, temperature and time exert the greatest influence in the development of reversion resistance. Hydrogen peroxide concentration and pH have an equal but lesser effect.

Bleach consistency is a relatively unimportant factor in stabilizing pulp brightness. Increases in the numerical designation of any of the variables tend to enhance brightness stability, however.

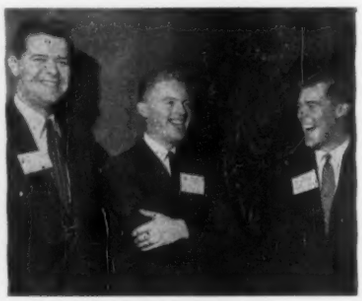
The effect of any one of the variables is more pronounced when the other variables are adjusted in the lower portion of their respective normal operating ranges. The converse is also true—the effect of any one variable is subdued if the other variables tend to be in higher levels of the respective operating ranges.

YANKEE VISITORS ATTEND CONFAB . . . HARRY ABRAMOWSKI (left), *Plant Engineer*, and JIM CHALLAS, Technical Supt., both of American Box Board Co., Filer City, Mich., journeyed to the "City of Dixieland" for pulping talks.

A STUDY IN SCREW PRESS WASHING . . At West Virginia Pulp and Paper's Charleston, S.C., mill, experiments have been underway with Sutherland screw press washing of hardwood pulp. J. D. Wieters, asst. pulp supt., made suggestions in presenting findings. Arrangements, he said, should be investigated for coping with effects of springback in producing voids, one obvious approach being to submerge or flood the approach.

At Charleston, a Sutherland breaker trap and Bauer refiner are ahead of a Cowan screen and valveless washer, which precede screw press washers. Stock comes off Sutherland washers at 35% to 45% consistency.

AUSTRALIAN ENGINEER JOINS U. S. FIRM . . . KEITH V. THOMAS (left), new Canadian Representative for Pulp and Paper Division, Sprout, Waldron & Co., Inc., based in Montreal, made the tour to Gaylord Container Corp. with ROBERT M. (BOB) MILLER (middle-foreground), Office Mgr., Sprout, Waldron headquarters, Muncie, Pa., and C. W. (BILL) CONVERSE (right), Mgr. of S-W Pulp and Paper Division, also of Muncie. Born in Australia, Mr. Thomas graduated from the Gordon Institute of Technology, at Gelong, Victoria, Aust. He has been Division Engineer, Price Bros., Kenogami, Que. In a few months he expects to move to Muncie.



NEW REPRESENTATIVE for R. T. Vanderbilt Co., BOB LINK (left), Savannah, seems pleased as punch about something, as do his cohorts, DICK OSBORN (middle), of Finch, Pruyn Co., and NATE PUTNAM, also of Vanderbilt Co., Kalamazoo, Mich. Bob was recently married, perhaps that's why he's all smiles.

There is need, Wieters said, for further development of suitable worm designs of screw press washers for specific pulps.

Because the screw press system follows theory as far as mixing liquor with pulp and then removing black liquor solids by squeezing out liquor, highest discharge consistency will produce the best results. It is recommended, however, that consistency should be lowered immediately upon emergence from the last press to eliminate the difficulty in breaking down nodules in hardwood after storage at press discharge consistency.

Results at Charleston with Sutherland washers have been in range of 77 lbs. salt cake per ton of washed pulp with 15.5% solids content liquor to evaporators.

DISPOSAL OF SEMI-CHEMICAL

EFFLUENTS. . . . Recovery of 80% to 90% of sulfur fed to digesters is expected from the new Mead Corp.-Babcock & Wilcox carbonation recovery cycle system, which is being introduced in the Watervliet Paper Co. mill, Watervliet, Mich., and Mead mill at Lynchburg, Va., as well as a mill in southern France. Philip Schick, formerly with Mead, now with National Container in Jacksonville, as research director, described it. Precautions must be taken because of the toxic effect of hydrogen sulfide in flue gas.

The Western Precipitation Corp. plant at Nekoosa-Edwards Paper Co. was discussed by Robert Q. Boyer of that company. This applies green liquor phase separation to neutral sulfite-kraft integration, and a high sulfur content liquor is burned in a modern kraft recovery unit.

At the Pulp and Paper Research Institute in Montreal, effluent has been burned in a jacketed and indirectly heated furnace in which liquor is introduced by pressure or centrifugal atomizer. Atomized droplets burn without turbulence. High temperature gradient of the furnace wall repulses the droplets, keeping the wall scale free. G. Lee and W. H. Gauvin presented this paper.

The cold soda hardwoods pulping recycling system was described by representatives of the Forest Products Laboratory at Madison, Wis. Green Bay Paper & Pulp was first user of the cold soda pulping system and now Bowaters Southern is to operate a pilot plant. Another large Southern mill is reported making plans to introduce the cold soda system for hardwoods in the near future.

Bleaching at East Texas Pulp & Paper Co. (described in PULP & PAPER's first complete story published about this company, including many exclusive pictures—Aug. 1956 issue) was discussed by Wayne Robinson and J. B. Beck. Effect of sulfidity on western red cedar, by C. B. Christiansen and J. S. Hart of Canada's Research Institute, studies of pulping effects on chip size and of pre-impregnation by Prof. W. J. Nolan, U. of Florida, a paper on the H-factor by E. K. Vroom of the Canadian Institute, and evaporator chemical cleaning by John Rusch of Chemical Cleaning Inc., were other papers.

George Seymour of Brunswick Pulp & Paper, described how that mill achieved improved control of chlorine additions in bleaching first stage--the primary chlorination stage --and this brought about lower costs and an improved product.

H. Y. Charbonnier, mill manager for Union Bag-Camp Mfg. at Savannah, will be chairman of the Alkaline Pulping Conference again when it meets next November in Charleston, S.C. In 1958, the division plans to meet in Portland, Ore., or Seattle.

THEY MAKE BAGASSE PAPER . . . at nearby Lockport, La. ED POWELL (left), Vice Pres. in charge of Development of Valentine Pulp and Paper Co., and W. A. (BILL) ROBINSON, Executive Vice President.

Valentine Pulp and Paper And Its Executive Staff

The Valentine Pulp & Paper Co., Inc., on the Mississippi Delta southwest of New Orleans, is now making around 60 tons a day of bleached white writing, printing and offset papers. Perkins-Goodwin Co. is sales agent.

Some modifications of process have been made and what is officially designated the Valentine process for converting sugar cane bagasse to paper is used. Equipment includes rotary digesters, three stages of bleaching, beater, jordans and a 144-in. (138-in. trim) Fourdrinier paper machine.

Herman Brown, of Brown & Root, engineers, is president. William A. Robinson, formerly in Southern U.S. and California mills, and more recently in research for the Hawaiian Sugar Planters, is executive vice president. Hedley J. Frensley, Brown & Root, is vice president. Ed Powell is vice president in charge of development. He also is head of the pulp and paper group for Brown & Root, engineering firm in Houston, Tex..

Warren Girard, plant manager, was formerly with Hawthorne Paper Co. in Kalamazoo and Peavy Mills in Ladysmith, Wis.

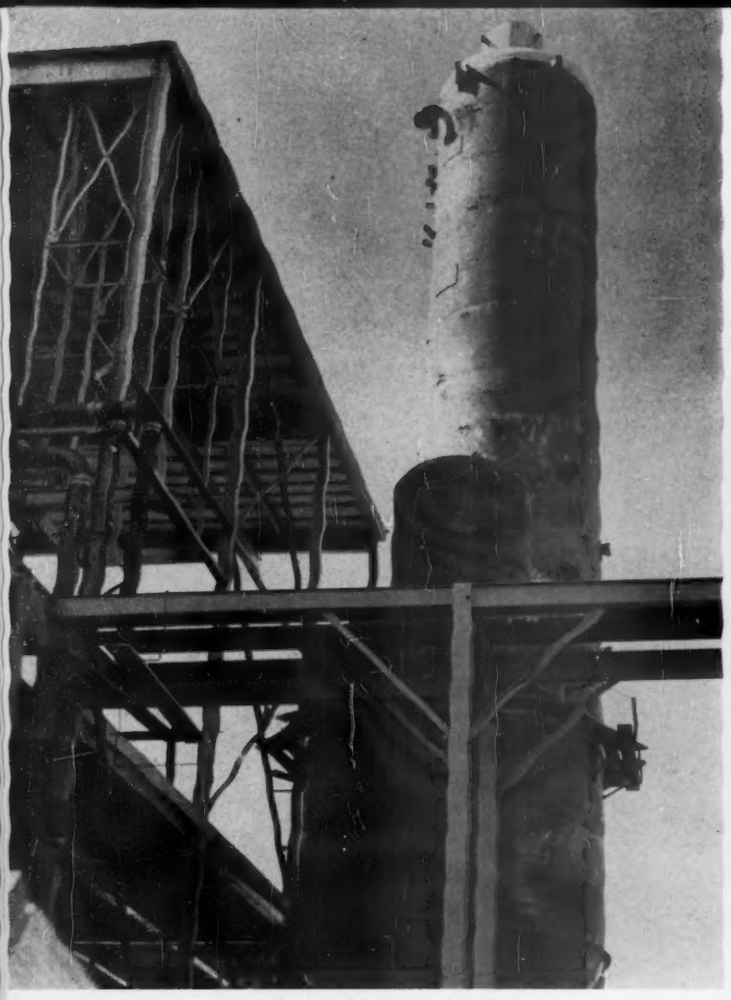
Talmadge Bullock, from the East Texas Pulp & Paper Co., is pulp mill supt. He was associated with Mr. Robinson in a California mill and prior to that with the Atenquique mill, Mexico's first mass producer of kraft. Walter Hendrix, paper mill supt., was formerly with Herty Lab, Savannah.

New Head Men of Crown Zellerbach

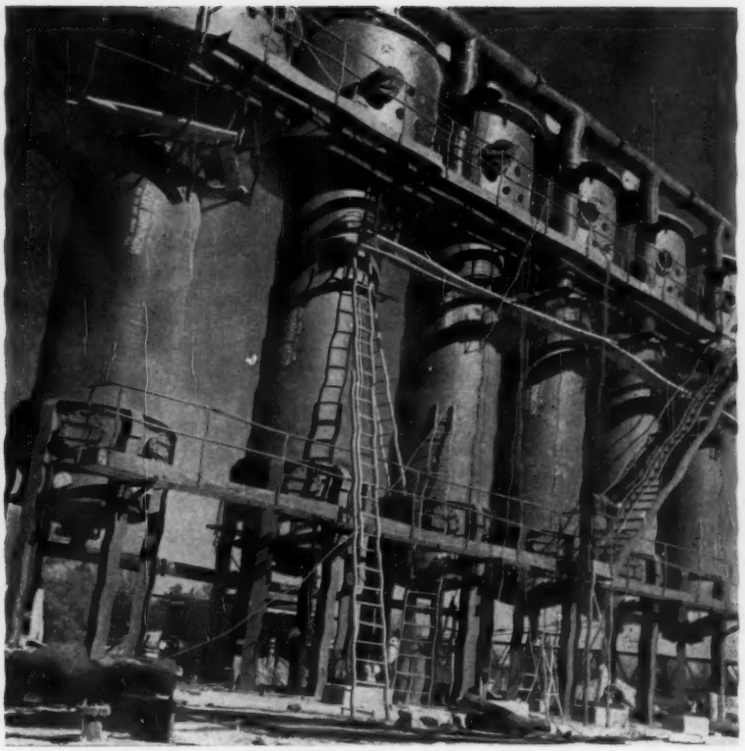
REED O. HUNT (left) is the new Executive Vice Pres. of Crown Zellerbach Corp. and ALFRED B. LAYTON (right) is President. Mr. Hunt and Mr. Layton share executive responsibility in a new pattern of group management of the $450 million paper company, replacing J. D. and Harold L. Zellerbach, both soon due to retire from active management at 65. The former has been designated Ambassador to Italy by President Eisenhower. He also was elected Chairman of the CZ board. His brother, Harold, was elected Chairman of the board's executive committee. Truman W. Collins, Pres. of Collins Pine Co. of Portland, Ore., and a Director of CZ, was elected a member of the executive committee, to replace Alexander R. Heron who has retired.

Mr. Layton, 54, has been Vice Pres. for Administration and Finance, and also headed up research and is responsible for the administrative sector of corporate activities. He was first Manager at the Port Townsend Mill. Mr. Hunt, 52, who had been Vice Pres. for Operations, is now directly responsible for the operational sector of corporate activities such as timber, manufacturing and sales. Mr. Layton got his start in the lowest jobs in mills, later as a salesman. Mr. Hunt began as a store room clerk in Port Angeles Mill, later was Office Mgr. of two mills.

Three new Senior Vice Presidents are D. S. Denman, V.P. for Timber; G. J. Ticoulat, V.P. for General Paper Sales; and E. J. Spiegel, V.P. and Gen. Mgr. of Gaylord Container Division.



STRANGE-LOOKING 90-ft. high Kamyr continuous digester tower rises above bleach plant at Gulf States' new Demopolis mill.



MAN IS DWARFED (on raised walkway) by new 6-effect, 6-body Goslin-Birmingham evaporators already in place.
A PULP & PAPER photo

SPECIAL PROGRESS REPORT

Camera Eye View of Demopolis

Gulf States Paper Corp.'s new double chlorine dioxide bleached pulp mill is well along toward summer start-up

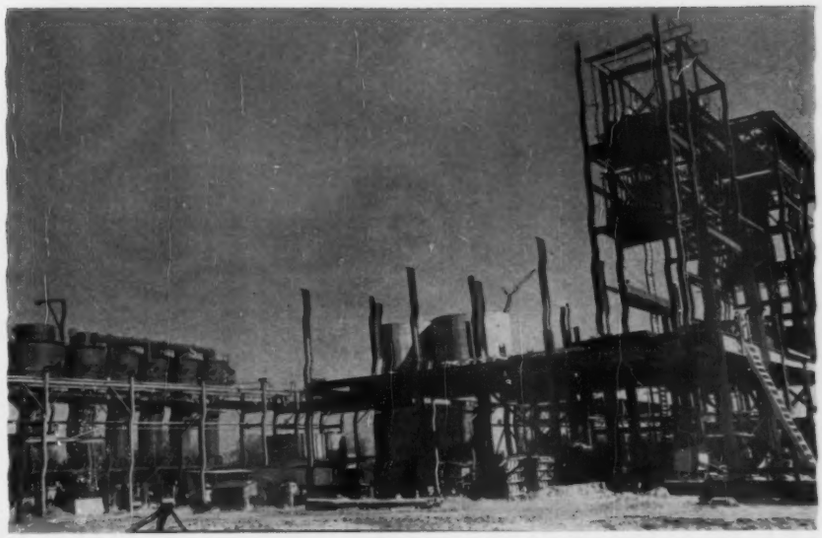
● Eleven miles west of Demopolis, *Ala., on U.S. 80, the South's newest* market pulp mill begins to take shape. *No longer a draftboard dream or just* bulldozers turning over earth, Gulf States Paper Corp.'s $25 million plant is well on its way toward its expected completion date next summer. It will add 300 tons a day of high-brightness bleached pulp to the market, pulp to be sold through the firm's new E-Z Pulp Division.

On these pages, PULP & PAPER shows some pictures of the mill's progress. There will be much to watch here on this 1,400 acre site along the edge of the Tombigbee River, not the least of which will be the new Kamyr continuous digester, housed in a slim 90-ft. high tower which already is in place behind the bleach plant, beside blow tank, and rated at 300 tons a day—*to date the largest single continuous* digester of its kind in the world. It has *screw-feed and screw-exit. In Europe,* Kamyr digesters have permitted close *control of cooking variables, providing* uniformity with high strength. Temperatures and pressures are independently controlled. Steam adjustment is separate from pressure pump.

But being a leader with new processes is not new at Gulf States. The company, founded by Herbert Eugene Westervelt at Marseilles, Ill., in 1884, was the first to move south. It started operations at Braithwaite, La., in 1915, later moved to Tuscaloosa, Ala. (60 miles north of Demopolis), where all manufacturing facilities were concentrated. Today, at its Tuscaloosa mill, it makes one of every six grocery bags for the U.S. market. The E-Z Opener grocery bag was invented by Mr. Westervelt in 1903. Remember when *you were young and the grocer always* amazed you by snapping open the *grocery bag with a deft flip of the* wrist? That was the E-Z Opener.

CLOSE-KNIT "MANAGEMENT TEAM" . . . Gulf States Paper has a small, closely knit management team. Its board of directors and stockholders can easily fit into a small conference room. The present "management team" is comprised mostly of young men in their late 30's or early 40's.

Mrs. Mildred Warner, president of the company, is the daughter of the founder. Her husband, H. D. Warner, chairman of the board, was largely re-



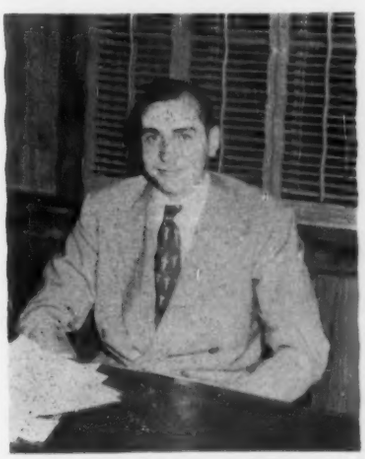
GENERAL VIEW SHOWS IMPORTANT AREA at Demopolis mill. At left, evaporators. At right, recovery area for Babcock & Wilcox unit. Between them and at rear are chip silos and wood preparation plant.

sponsible for early timber acquisitions and conservation methods started by the company. But since their son, Jack W. Warner, returned from war service, they have not been as active in management. Mrs. Warner is a trustee of Sweet Briar College, has a doctor of laws honorary degree from the University of Alabama, and her services to the community won her its first Citizenship Award.

Jack Warner, a tall slim energetic man, is executive vice president and treasurer. Willis Penfield, a veteran with the company since 1910, is vice president. On the "management team" are such men as Amos Schuster, young sales manager whose training was with Booz Allen & Hamilton, management firm; Vance Miles, forestry manager and head of its public relations, particularly with farmers and woodlot owners; W. G. Reynolds, manufacturing manager; and Henry P. Halsell, formerly planning manager, who has moved to Demopolis as the new resident manager there.

The organization is essentially young and dynamic under Jack Warner's leadership. Although the company is 73 years old, its progress has been greatly accelerated in the last decade. In 1945, it owned 125,000 acres of land and made 185 tons of paper a day at Tuscaloosa. Now it owns 320,000 acres; makes 400 tons. And it is still undergoing further modernization at Tuscaloosa, which very soon will substantially increase its Tuscaloosa tonnage.

A visitor to Gulf States Paper quickly senses the healthy climate for good team work, esprit de corps and encouragement and development of abilities and capacities of men on the staff in all departments. You see lots of young men in key positions on the Gulf States staff, working in a company framework which gives them extensive responsibilities and any impression of an "old company" is quickly dispelled.



JACK W. WARNER, Executive Vice President and Treasurer of Gulf States Paper Corp., at his desk in Tuscaloosa.

WHAT'S DOING AT DEMOPOLIS . . . Mr. Halsell, who has moved his family into a new home at Demopolis, is a native of El Dorado, Ark., and graduate of the U. of Arkansas, West Point and Harvard. He served 10 years with the Army Corps of Engineers and came to Gulf States Paper in 1952 as new facilities engineer. He played an important role in planning Demopolis.

District sales manager for pulp is Walter Lawrence, of New York.

There are 100,000 acres of company timberlands set aside to contribute to support of the Demopolis mill.

Pulp at the new mill will be dried on a 234-in. Beloit Fourdrinier machine. Bleaching will be done in five stages: Chlorination, caustic, chlorine dioxide, caustic, and a second chlorine dioxide stage. The Olin Mathieson ClO_2 generating process is used. Babcock & Wilcox recovery and power units and a 10,000 kw General Electric turbogenerator will be employed as well as Goslin-Birmingham 6-effect evaporator. Pulpwood will be chipped on a 96-in. Carthage Norman helical knife chipper. Impco is providing bleach plant equipment. Tanks and towers are by Chicago Bridge & Iron Co.

The mill was engineered and is being constructed by the H. K. Ferguson Co.

INTERESTING VIEW of Carthage Norman helical chipper, showing back, as yet unenclosed, where blades will be installed.

NEW OFFICERS OF PACIFIC COAST DIV. of Superintendents take on duties (l to r): Chairman JACK V. SAVAGE, Crown Zellerbach, Camas, 3rd Vice Chairman GLEN D. KING, CZ West Linn, 1st Vice Chairman HENRY W. DAUTERMAN, Longview Fibre Co., Longview, 2nd Vice Chairman FRANK R. HAMILTON, Simpson Paper Co., Everett, Secy.-Treas. R. BURKE MORDEN, Modern Machines Co., Portland. Retiring Chairman MAX A. BAILEY, Westminster Paper Co., New Westminster, B.C.

HIGHLIGHTS OF COAST MEETING

Making Glassine, Continuous Cooking

● The manufacture of glassine and greaseproof papers, a distinguished specialty field of the industry in which "growth has been tremendous," was spotlighted at annual fall meeting of Pacific Coast Div. of American Pulp & Paper Mills Superintendents Assn. in Portland, Ore.

Robert E. Harper, general manager of R-W Paper Co.'s new plant at Longview, Wash. which started production last summer, disclosed that eleven U.S. mills are now producing about 160,000 tons of glassine-greaseproof paper annually. This consists of approximately 500 distinct grades "designed and tailor-made to fit a specific purpose and which, in a vast majority of cases, must meet a very rigid set of specifications." Of the total G-G output, around 85% goes into food packaging and the balance to such non-food uses as map overlay tracing, separator and manifold sheets.

About 80% of the greaseproof production is transformed into glassine by supercalendering, the other 20% finding its end use as greaseproof.

A pulp which can be highly hydrated by beating and refining is an essential for producing these papers. Pulp fibers are fibrilized, with a minimum reduction in length, to absorb enough water to become superficially gelatinized and retain this property in the finished sheet, thus forming a barrier to grease or oil. Stone-roll beaters and bronze, steel or lava-stone refining equipment come into extensive use for developing the required pulp characteristics.

Although the importance of a supercalender's contributions to glassine can hardly be over-emphasized, Mr. Harper stated that the degree of greaseproofness depends "primarily on the hydration that pulp receives and secondarily on the degree of supercalendering." A basic sheet of paper, however, can be given "a wide range of transparency, gloss and density" by supercalender manipulation.

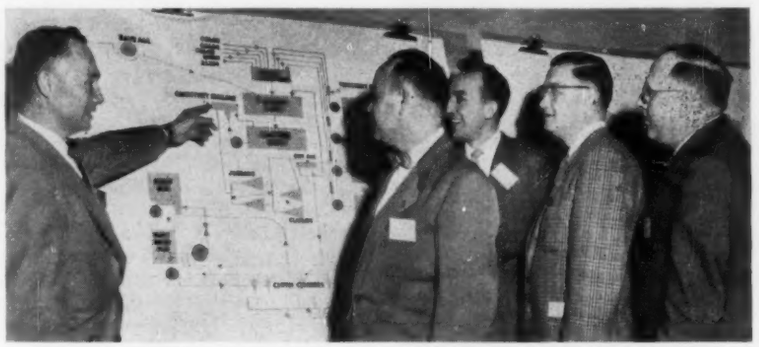
CONTINUOUS COOKS . . . Cooking by the Kamyr system effectively provides the advantages of the old, proven batch methods on a continuous production basis, according to Lennart A. Lundberg, of A. H. Lundberg, Inc., who presented a paper on the process. "For an operator," he states, "it means that with this equipment he has more complete control of a familiar operation, has the tools to take full advantage of raw materials at his disposal."

According to Mr. Lundberg, the system provides a flexibility of equipment arrangement adaptable to suit almost any mill requirement. The digester itself is sized to give a cooking curve equivalent to that normally used for a given species and grade of pulp. Characteristics of the cooking curve can be controlled by the location of strainers in the cooking unit. The self-cleaning feature of these strainers was reported as "ensuring desired circulation rates at all times."

As to the acceptance of Kamyrs, Mr. Lundberg said 34 have been ordered and 12 already put into operation. Of four for the United States, the first to start up was at International Paper Co.'s Camden, Ark. plant last June. Within three months, he said, continuous production was brought up to the equivalent of the conventional batch production.

Prospective start-up of Kamyrs, said Mr. Lundberg, were at North Western Pulp & Power Ltd. at Hinton, Alta., and Weyerhaeuser Pulp Div., Longview, Wash.

PULP QUALITIES FOR TISSUE . . . Peter P. Taranoff, of Crown Zellerbach St. Helens plant, discussed the production of kraft tissue on the mill's



SPEAKERS ON PACIFIC SUPERINTENDENTS PROGRAM study flow chart (l to r): PETER P. TARANOFF, Crown Zellerbach Corp., St. Helens, R. G. McSTOTTS, Simpson Paper Co., Everett, L. A. LUNDBERG, A. H. Lundberg Inc., Seattle, FRANK R. HAMILTON, Simpson Paper Co., R. E. HARPER, R-W Paper Co., Longview.

No. 3 machine, which started up in March 1955 as "the world's largest Yankee type tissue machine." (See May 1955 PULP & PAPER). Four different stocks go into this tissue—bleached kraft, broke, groundwood obtained in noodle form from CZ Camas mill, and some East Coast short fiber pulp.

The bleached kraft, when mixed with groundwood, broke and short-fiber pulp, yields a product which can be handled on this machine and "results in a sheet meeting or exceeding the specifications worked out by our control, conversion and sales departments," according to Mr. Taranoff.

He said the groundwood stock gives reduced freeness and fills the sheet without increasing its hardness. Broke, which is segregated according to color and repulped in a Morden Slush-Maker, helps provide the fines needed for formation and softness.

The speaker specified the following production factors as contributing to a soft, well-formed sheet: Ability to handle four stocks in any percentage mixture; stock preparation, designed for short fiber so as to give good formation without hardening the sheet; creping doctor, cleaning and skinning doctors, and calendering to mechanically soften the dried sheet; variability of speed between sections is especially important in pulling out the crepe; and a tape rewinder to pull out whatever crepe is desired.

NEW BARKER UNIT . . . R. G. McStotts, of Simpson Paper Co., discussed that firm's barker-chipper facilities recently installed at its Everett, Wash. mill. The debarking unit, a 50-in. mechanical Nicholson capable of processing around 100,000 bd. ft. of logs in 8 hours, effectively removes bark from both broadleaf and coniferous species used at the plant. If a log is too large to go through the debarker, the ring component lifts out of the way and the log passes straight through, without processing, and the bark subsequently removed manually. A company policy of not purchasing pulp logs larger than 60-in. diameter has the effect of minimizing this hand processing. The feeling is that logs over 60-in. diameter cause more trouble in the production processes than they are worth.

One full day was devoted to organized visits to the St. Helens, Longview, Vancouver, Camas, West Linn and Oregon City mills. Registrants, of which there were 434 (including wives), had a choice of four tours, each to either two or three mills.

PRODUCTION SETS RECORD in breakfast skit given by Waiting Room No. 1, International Brotherhood of Migratory Peddlers (l to r): JACK GILBERG, General Chemical Div., Allied Chem. & Dye, and TOM SCARFONE, Eastwood-Nealley Corp.

VISITING WEST COAST (l to r): MILTON M. BIXBY, of Hercules Powder Co., Wilmington, Del., Chairman of Superintendents' National Affiliates Committee, and MARTIN J. AUCHTER, Charmin Paper Mills, Inc., Green Bay, Wis., President of National Superintendents.

Falk Corp. Promotes Williams and Kelley

Walter L. Schneider, vice president and director of sales of The Falk Corp., Milwaukee, Wis., announces promotions of Franklin C. Williams to sales coordinator and A. H. Kelley to manager—sales promotion and advertising.

Mr. Williams, a mechanical engineering graduate of U. of Wisconsin, served in the Navy during World War II. He joined Falk in 1946 and for the last 3½ years he has been manager—sales promotion and advertising.

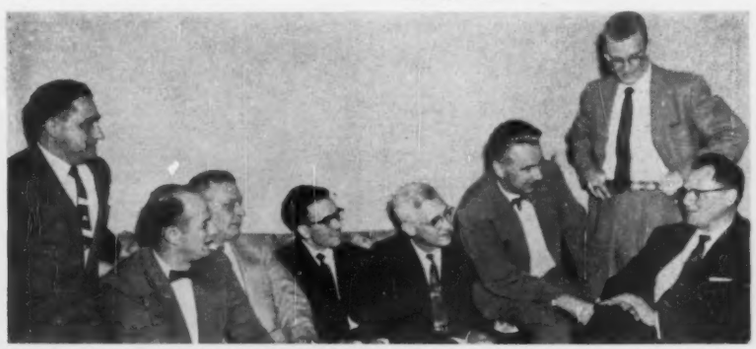
Mr. Kelley, a graduate of Marquette U., joined Falk in 1939. For the last 3½ years he has been assistant manager—sales promotion and advertising.

Advantages of Continuous Pulping

At Lake States TAPPI meeting at Wausau, Wis., on Nov. 13 the subject of continuous pulping was handled by a panel, each member presenting a short commentary on the application his company makes of the continuous pulping process. Each panel member described general methods of operation and his views of advantages and disadvantages of continuous pulping.

The panel members were in general agreement as to these specific advantages of continuous pulping practices: Minimum operation man-power, closer possible control of process, and ability to make rapid process changes. It was also generally agreed that present units are not the final answer and improvements in continuous equipment can be anticipated.

About 175 members attended the dinner and meeting, and 150 visited National Container's plant at Tomahawk, Wis.



EXPRESS VIEWS ON CONTINUOUS PULPING . . . Lake States TAPPI meeting at Wausau heard this panel and others air views on continuous pulping (l to r): JOHN R. LAVIGNE (panel), Asst. Mgr. Pulp and Paper Div., Foxboro Co.; W. J. BUBLITZ (Lake States Secy.), Kimberly-Clark Corp.; DONALD VOIGTS (panel), Asst. to Operations Mgr., American Box Board Co., Filer City, Mich.; PAUL TROUT (panel), Chief Chemist, Waldorf Paper Products Co., St. Paul, Minn.; K. E. OLSON (panel), Chief Chemist, National Container Corp., Tomahawk, Wis.; D. J. MacLAURIN (Lake States Vice Chairman), Gilbert Paper Co.; WILLIAM R. NELSON (Program Chairman), Green Bay Paper & Pulp Co., Green Bay, Wis.; and S. J. BAISCH (Chairman, Lake States TAPPI), Thilmany Pulp & Paper Co., Kaukauna, Wis.

HOW THAT ALDER GROWS! Dr. DONALD H. CLARK (in middle) shows cross-section of tree that grew to diameter of 16 in. in 50 years. All but last 3½ in. was put on before the tree was 30 years old. Left to right: DWAYNE J. CLARK, Technical Director, Simpson Paper Co.; NORMAN S. LEA, Technical Director (Pulp), Scott Paper Co., Everett, moderator; Dr. CLARK; Dr. ROBERT H. QUICK, Weyerhaeuser Timber Co.; and WILLARD OSBORNE, Improved Machinery Inc.

TWO B.C. ALUMS SHAKE. Dr. KEN BOOTH (left), Manager, Fiber Research, CZ Central Research Dept., Camas, Wash., and Vice Chairman of Pacific Section TAPPI, was pleased to find banquet speaker Dr. GEOFFREY BEALL, Statistician, Gillette Safety Razors, Boston, was a fellow alum of Univ. of British Columbia. Others (left to right): JACK DUNKAK, Puget Sound Pulp & Timber Co., Chairman; NORMAN S. LEA, Scott Paper Co., Moderator; and Dr. BEN BRIGGS, Manager Rayonier Olympic Division, Shelton, Wash., Section Chairman.

Hardwoods—Cost Factors and Uses

• What will happen to the supply of Pacific Coast hardwood timber when the easily accessible stands of today are removed? The pulp industry itself and timber owners large and small hold the answer, and thus the key to continued progress and production in the field of hardwood pulp manufacturing.

This viewpoint was expressed by Dr. Donald H. Clark, assistant director of Washington's Institute of Forest Products, one of the several participants in TAPPI Pacific Section's meeting at Bellingham, Wash., Nov. 28.

Present annual consumption of hardwood pulpwood in western Washington is 265,000 cords, largely alder and cottonwood. Current sustained yield availability is 425,000 cords per year.

Production costs of independent pulpwood suppliers are about $14 per cord, said Dr. Clark, and he estimated this cost is several dollars under the per cord costs of the forest-owning pulp companies cutting their own stands.

COST REDUCTIONS in hardwood logging are possible, Dr. Clark said, through the development and use of more efficient light, mobile woods equipment.

Red alder (Alnus rubra) and black cottonwood (Populus trichocarpa) are the predominant species logged; bigleaf maple (Acer macrophyllum) is a "weak" third. Madrona and ash are utilized by one or two pulp producers.

He said future needs of the pulp industry for hardwood will be difficult to meet unless provision is made for regeneration of hardwoods after logging.

PULPING HARDWOODS for corrugating medium at Weyerhaeuser's Longview, Wash., operations, was described by Dr. Robert H. Quick, project chemist. The plant annually receives 60,000 cords of hardwood, largely alder. Production of corrugating medium is 200 tons yer day. In each cook are 26 tons of hardwood, with 8 tons of Douglas fir chips added to increase runability on the machine. He predicted "future uses not even dreamed of today." (A complete article on the Weyerhaeuser operation is in the Jan. '56 issue of PULP & PAPER).

Dwayne J. Clark, technical director, Simpson Paper Co., Everett, Wash., discussed his mill's operation involving large amounts of cottonwood.

WALDORF'S NEW BARKER . . . Pictures of mechanical barkers were shown, including Improved Machinery Co.'s S-20 barker at Waldorf Paper Products Co.'s concentration yard in Bagley, Minn. Willard Osborne, of Impco, stated that in a year's running, this barker had developed an excellent record of low maintenance costs and that it was low in down-time.

Robert Smythe, Ray Smythe & Co., previewed Carthage's new slab barker for small sawmills. Slides of the new Nicholson "Rotobarker" at Simpson, Everett, were shown by Dwayne Clark.

A plug for wider adoption of courses in statistics for personnel in the industry was a major point in talk by Dr. Geoffrey Beall, statistician for the Division of Manufacturing, Gillette Safety Razors, Boston.

SWEDISH SCIENTISTS BORE INTO LIGNIN at Longview, Wash. Pacific Section TAPPI meeting (l to r): Moderator ARTHUR E. ERICKSON, Technical Director, Pulp Div. Weyerhaeuser Timber Co., Dr. E. ADLER, Chalmers Institute of Technology, Gothenburg, Dr. GUNHILD AULIN-ERDTMAN and Dr. HOLGER ERDTMAN, both of Royal Institute of Technology, Stockholm (wearing a twig on his lapel). Specialty considerations of lignin by speakers were, respectively, recent chemistry developments, ultraviolet spectroscopy, and classifying conifers by chemical components in contradiction to accepted botanical classification.

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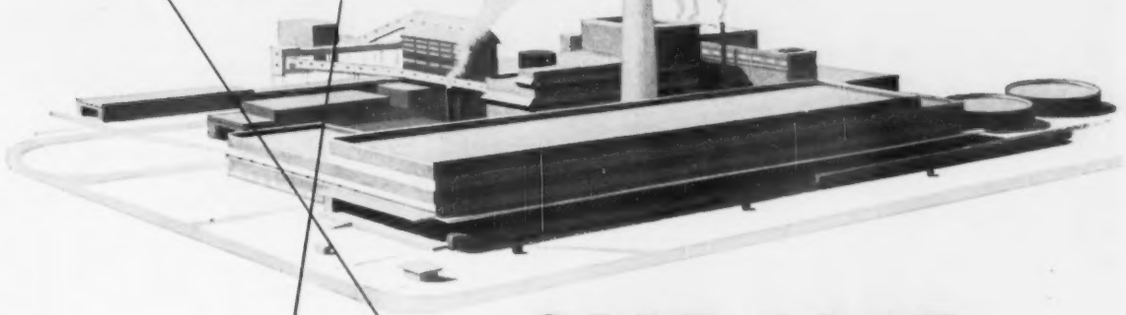
2 QUALITY PRODUCTS

from **2 DEPENDABLE SOURCES**



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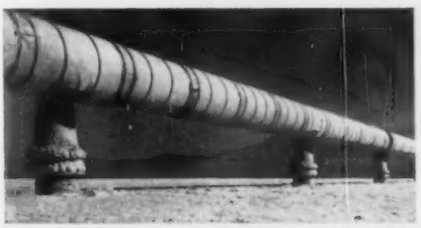
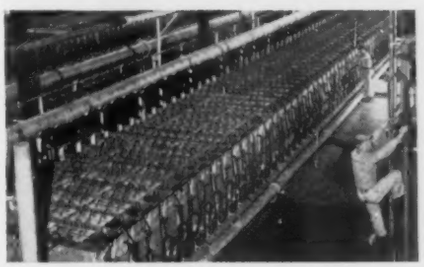
SODIUM CHLORATE
FOR CHLORINE DIOXIDE BLEACH

SEARLES LAKE
at Trona, California.
Source of *natural* sodium sulphate, essential for quality kraft production



HENDERSON, NEVADA.
Source of $NaClO_3$ for the SOLVAY high-stage chlorine dioxide pulp bleaching process.



Add another step forward in American Potash & Chemical Corporation's continuing diversification program! Trona has long been the leading source of *natural* sodium sulphate (Na_2SO_4) from the brines of Searles Lake, so essential in quality kraft production. Now from American Potash & Chemical Corporation (Nevada) (formerly Western Electrochemical Company) Trona serves the industry with highest purity sodium chlorate, used extensively in the SOLVAY high-stage chlorine dioxide pulp bleaching process. Two dependable sources, two quality products—a combination that can't be beat!

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One reason for the public acceptance of cellulose facial tissues is their "clinical" whiteness. You can heighten the brightness, whiteness and opacity of such tissues by adding TITANOX-A-WD at the beater . . . yet softness of the fibers can be maintained.

For lightweight stocks, publication paper, glassine, TITANOX titanium dioxide is your No. 1 choice in white pigments. Titanium Pigment Corporation (subsidiary of National Lead Company), 111 Broadway, New York 6, N. Y.; Atlanta 5; Boston 6; Chicago 3; Cleveland 15; Houston 2; Los Angeles 22; Philadelphia 3; Pittsburgh 12; Portland 14, Ore.; San Francisco 7. In Canada: Canadian Titanium Pigments Limited, Montreal 2; Toronto 1.

*TITANOX is a registered trademark for titanium pigments sold by Titanium Pigment Corporation.

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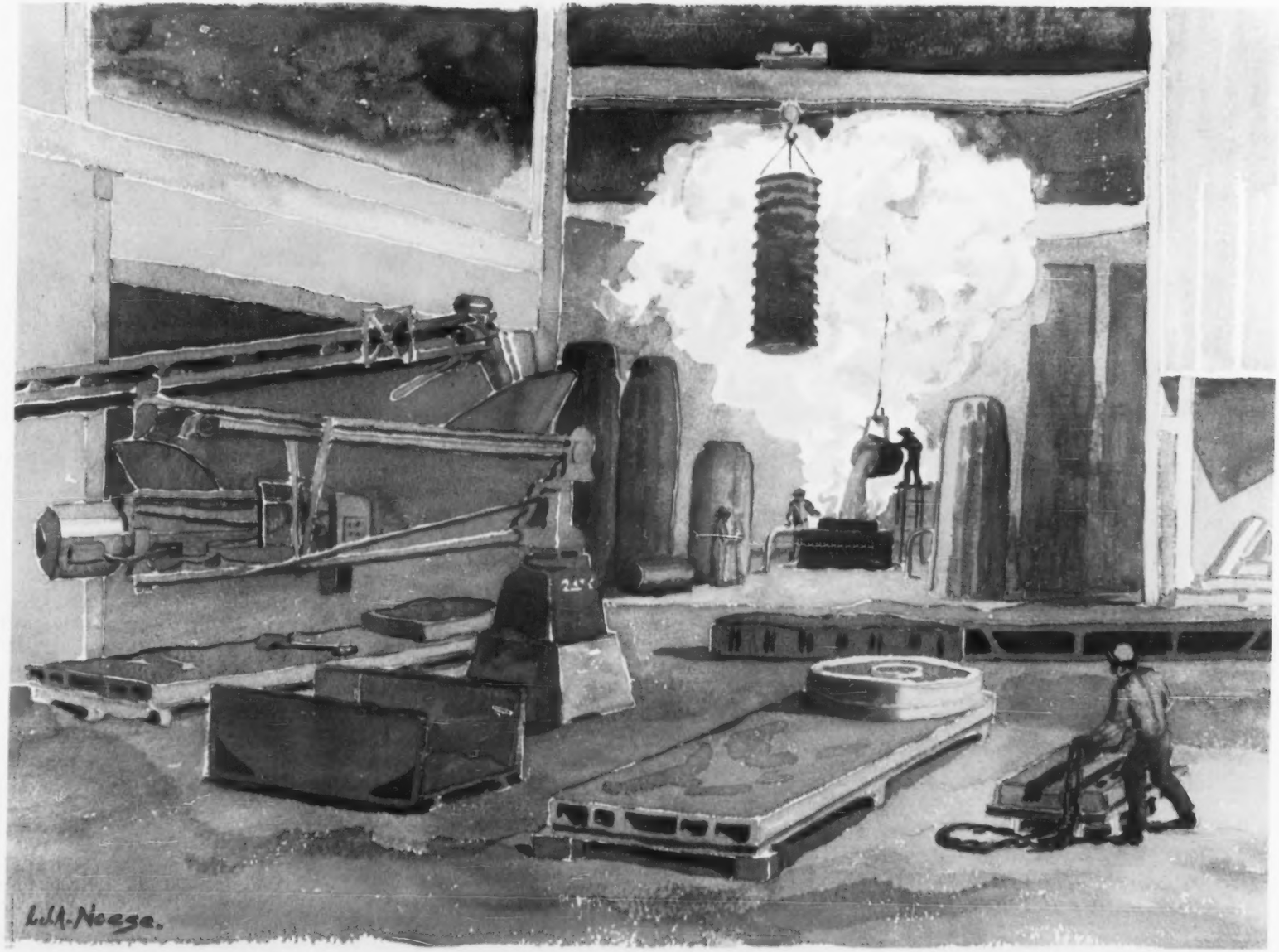

WATER COLOR PAINTING BY L. J. A. NEESE

BELOIT IRON WORKS · PAPER MACHINERY · BELOIT, WIS. U.S.A.

NEW FOUNDRY at Beloit Iron Works: view from core rooms toward dryer and roll-casting shops. Foundry expansion, including melting, molding, and sand system facilities, provides 100,000 additional square feet and doubles Beloit foundry capacity.

Sulphur

helps to create headline products

ALUMINUM

Surely a 'headline product' even if not new! Aluminum is very much in the news today for it is playing a leading role in our steadily expanding economy.

What's all this got to do with Sulphur?

It's like a chain reaction. Demand for this remarkable light metal is increasing. This calls for more ore development and additional mills for the reduction of alumina to aluminum. More cryolite is needed for fluxing the molten alumina in the electrolytic cells.

True, cryolite (Na_3AlF_6) is found in nature but there just isn't enough tonnage to satisfy its many uses. So, to fill the supply gap, cryolite is being synthesized from fluorspar. It is here that Sulphur enters the picture, for one of its widely used derivatives – Sulphuric Acid – is a key reaction agent.

Texas Gulf Sulphur Co.

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- Moss Bluff, Texas
- Spindletop, Texas
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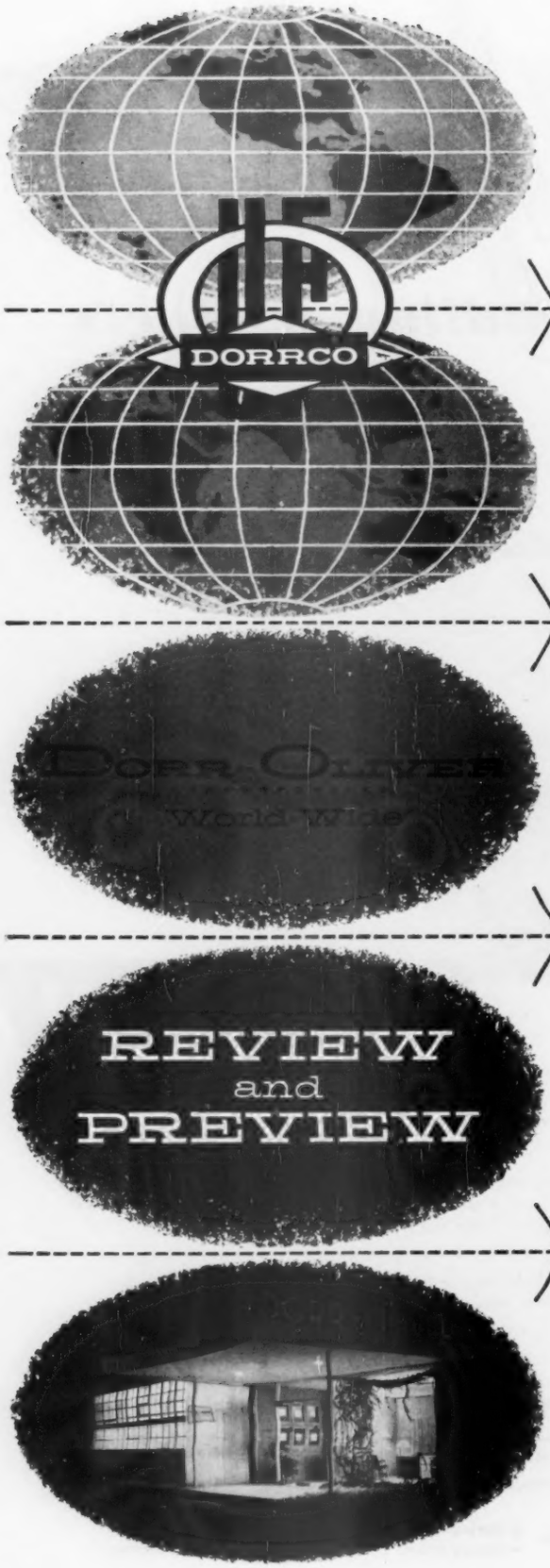

1956 has, in many respects, been a record year for us . . . characterized by advances in technology and an all-time high in volume of new orders and also billings throughout the world. This meant a year of strenuous adjustment due to the necessity of increasing our productive capacity to parallel our growing volume of business.

The acquisition of the Merco Centrifugal Co. of San Francisco on February 1, added centrifugals to our product line. This natural outgrowth of our cyclone work has proven to be a most successful move. Similarly, the year has demonstrated the strength of our new Canadian subsidiary, Dorr-Oliver-Long of Orillia, which became the newest member of our corporate family on January 1, 1956. Yet another step in the overall corporate growth picture was the completion of plans to add the ninth member of our overseas family, Dorr-Oliver Pty. Ltd. of Australia on January 1 of 1957.

Steps in matching our productive capacity to our growing needs included a million dollar expansion of our Hazleton plant scheduled for completion at the year's end and the opening of a sizable new production facility nearby in Pennsylvania. Currently, a long term expansion and reallocation program is underway which will step-up our ability to produce, and to serve, still further.

Growth and change in other operating areas of the parent company also kept pace. A broad reorganization of our domestic sales structure added new geographical divisions and was principally designed for better sales coverage and service. In engineering, the pressure of increased volume resulted in the opening of a branch engineering office in Pennsylvania, close by our East Coast plants, which has proven to be most worthwhile.

STARCH — The addition of Merco equipment to the D-O product line has been of significant importance, particularly in the starch industry. Merco Centrifuges and DorrClone units comprise a new and complete D-O starch washing system, the first of which was ordered this year for an Illinois cornstarch plant. In this installation, which also represents one of the largest DorrClone orders to date, Mercos will handle gluten-starch separation and gluten thickening, while degritting and starch washing will be performed by DorrClone units.

In other parts of the world a similar Merco-DorrClone system has gone into operation in Canada and a large number of DorrClones and DSM Screen units are processing potato starch at a Dutch plant. In India, Merco Centrifuges and Mercone Screening Centrifuges, introduced last year, will wash starch and dewater fibre at a large cornstarch plant. Our Associates in The Netherlands have also received orders for DorrClone starch washing systems in Great Britain, Germany and Holland.

PULP AND PAPER — Brown Stock and Bleach Washers, Savealls, Vacuum Deckers and a Recausticizing System for a new Arkansas Kraft mill represented one of the largest equipment orders in D-O history. Another Brown Stock Washing System in India will go into operation next year as will similar type systems in Peru, France and the Pacific Northwest, and a pulp washing installation in Michigan.

Our subsidiaries abroad have marketed Recausticizing Systems in Brazil, India, Sweden and Finland and a number of new or expanding plants in this country will also use the familiar D-O chemical reclaiming system. Evidence of continued popularity of the American Saveall is a repeat order for six units of various sizes placed by a Massachusetts paper producer.

WATER TREATMENT — Our subsidiary in The Netherlands entered their largest water treatment order in history for a complete plant to serve Zonguldak, Turkey. In the U. S., major expansions at Kansas City, Missouri; Dallas, Texas; and Springfield, Ohio; will incorporate D-O equipment in the flowsheet, while PeriFilter Systems will treat water for a Minnesota iron ore producer and for the municipalities of Summit, New Jersey and Fountain City, Tennessee.

ALUMINA AND MAGNESIA — Plant expansions in both fields contributed heavily to the year's business as four of the world's major alumina producers in the Gulf Coast area and Jamaica ordered a total of 45 Filters, 20 Thickeners and 26 low pressure pumps of various types and sizes. In Michigan, three magnesia-from-brine plants will add a variety of agitation, filtration and thickening equipment; while a West Coast magnesia-from-sea water producer will employ extensive D-O equipment.

SANITATION — The new Spirovortex-Superate Filter will produce a degree of purity comparable to that attained using the activated sludge process in plants treating up to one MGD of domestic sewage. We have developed the Degritting Clarifier and Clarigester for low cost grit removal in small plants and during the year we have incorporated important new features into the design of our Vacuum Filters for the sanitary field.

The completely D-O equipped sewage treatment plant for Karachi, Pakistan, represents the largest order in the sanitary field ever entered by our associates in The Netherlands. Typical of other new D-O equipped installations are those under construction in such diverse locations as Charlottesville, Virginia; Caldwell, Idaho; Midwest City, Oklahoma; Delhi, India; Nairobi, Kenya; and Rio de Janeiro, Brazil. Expansion of Providence, Rhode Island, treatment facilities calls for installation of nine Dorr Clarifiers, all over 100 feet square, and at Louisville, Kentucky, four 275 foot long Monorake units will be added.

POLYETHYLENE — Our contribution to one of today's most spectacular and rapidly growing fields — polyethylene — is the Merco Pressure Centrifuge, developed specifically for high pressure, high temperature operation. The basic unit was developed, designed and manufactured in record time to keep pace with the expanding industry. First commercial Centrifuges will go on stream early in 1957 separating catalyst from liquid polyethylene.

FLUOSOLIDS SYSTEMS — A large steel producer in the United States finalized plans for a new fine coal washing plant using a two Reactor FluoSolids Coal Drying System designed to handle 600 tons of metallurgical coal per hour. In the non-metallics field, three fluidized Reactors went into operation — two in the Detroit area drying blast furnace slag used in cement manufacture, and the other calcining clay in Scotland. Systems are now under construction to dry and preheat oyster shells and to calcine Massachusetts limestone.

Four new installations in Japan will roast 256 tons of zinc concentrates daily, producing both a readily usable calcine and SO_2 bearing gases for contact sulfuric acid manufacture. During the year two installations in the U. S. and South Africa operated successfully roasting copper for direct electrowinning. And pyrite roasters were ordered for a Canadian uranium mill, Chilean and Nicaraguan copper concentrators, French and Philippine fertilizer plants, and two Scandinavian pulp mills. In all, 21 fluidized Reactors were sold in 1956.

FERTILIZER — One of the highlights of the past year was the largest single D-O order ever received involving a phosphoric acid and 200,000 ton per year triple superphosphate plant for a Florida producer. The scope of our services on this project includes architect-engineer design, supply of equipment and construction materials, and supervision of erection and initial operation of the plant.

Other major design projects undertaken during the year were a 350,000 ton per year complete granular fertilizer plant in Great Britain, a 350 ton per day ammonium phosphate installation in Montana, and a phosphoric acid plant for Venezuela designed to produce 50 tons of P_2O_5 per day. During the year construction of a D-O engineering Scottish granular fertilizer plant was virtually completed, and Traveling Pan Filters were ordered for the difficult gypsum-phosphoric acid separation in a number of new chemical fertilizer plants around the world.

PETROLEUM — The Hi-Rate Pressure Filter has proven successful as a high-capacity water filter in oil field secondary recovery operations with rates higher than those of conventional units. Initial test work in other fields indicates the versatility and possibility of unusually widespread application of this new filter.

A variation of the D-Sander, first introduced in 1955, has been developed for removal of fine silica from rotary drilling fluids. The petroleum industry purchased during the year over one hundred D-Sanders of both basic types.

RESEARCH AND DEVELOPMENT — As a matter of policy, fundamental research continues on our now expanding line of basic unit operations. The principle of operating in many different but allied fields stimulates situations wherein fundamental research can produce new and useful products and processes. Such is not possible when interest is confined to but a few basic operations, as in our early years.

Similarly, general company development is continuing the search for new products allied in some manner with our experience and facilities. In this search we count heavily on the assistance and cooperation of our Associates throughout the world.

INDUSTRIAL WASTES — D-O equipped treatment plants handling chemical wastes were installed by a German and two British chemical manufacturers. The former installation incorporates the first D-O equipment to be purchased for this purpose in Germany since World War II. Next year two Southern pulp mills will clarify wastes in giant 300 foot Thickeners installed in earthen basins, and a U. S. steel company will recover flue dust in a completely D-O designed installation. Two similar flue dust recovery stations were also ordered from our British subsidiary during the year.

The year's impressive record of sales and technical accomplishment has been made by the hard work of our staff in every corner of the globe. The success of our operations naturally rests wholly with them, despite the importance of the tangible facilities and tools with which we work. In the year now drawing to a close this was again demonstrated, and as the tools and facilities we give them expand and become of better quality, so will our staff be able to produce greater volume and increasing returns.

J. D. Hitch, Jr.
President

November 20, 1956

At ORISKANY...

The magic of chemistry is taking the "bugs" out of your felt problems!

Bacterial damage to felt fibres can reduce felt life on a machine as much as 50% or more! Down time and production losses can seriously cripple your delivery schedules when you encounter this problem in your mill. At Oriskany, when our laboratory analysis of a felt sample indicates a bacterial condition, we apply our exclusive T-10 anti-bacterial treatment to correct this destructive action. Oriskany Felts treated with this chemical formula are protected permanently against bacterial damage without affecting finish, drainage or normal operation.

Do you have a special felt problem? Consult with the experienced Oriskany Sales Engineer when he calls at your mill. He is particularly qualified to analyze your felt requirements, and he will refer your problem to our team of laboratory specialists, designers and production engineers. They can recommend a design improvement or one of our many chemical treatments to correct your specific problem. Our constant aim at Oriskany is to help you make better paper products . . . at less cost.

First choice—because They last Oriskany

WATERBURY FELTS

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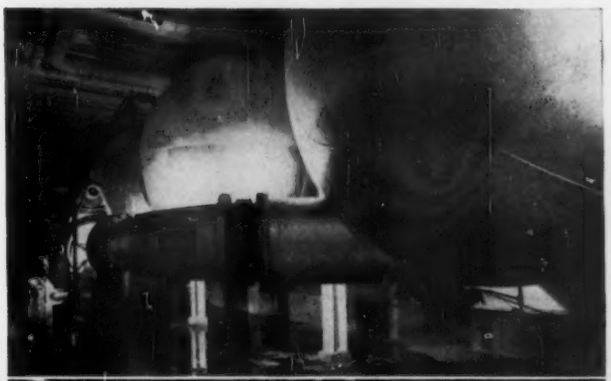
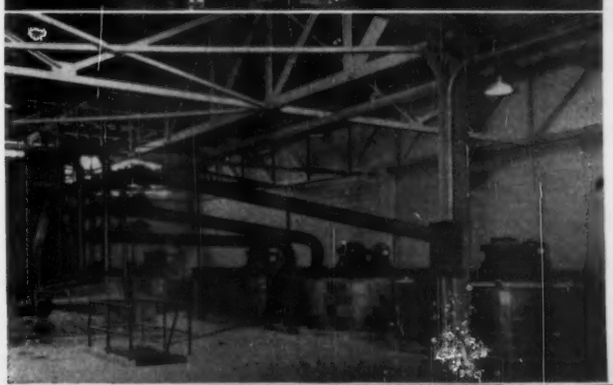
Stebbins research laboratory and engineering offices. Watertown, New York

RESEARCH and ENGINEERING have made Stebbins the World Leader





- **Designing**
- **Installing**
- **Maintaining**

Corrosion - Resistant

LININGS and TILE TANKS

The experience of practically all companies in the pulp and paper industry proves that it will pay you to put your corrosion-resistance problems in the hands of Stebbins specialists. Complete service, from original design to year-round maintenance. Get the facts.

Write for Bulletin A-153

SINCE 1884 Specialists in Design Installation and Servicing of Linings and Tile Tanks

SEMCO

STEBBINS

Engineering and Manufacturing Company, Watertown, N. Y.

STEBBINS ENGINEERING CORP. – 1504 TOWER BLDG., SEATTLE, WASH.

CANADIAN STEBBINS ENGR. & MFG. CO., LTD. – TOWN OF MOUNT ROYAL, MONTREAL 9, CANADA

GOT A PROBLEM

in water treatment...

FOR your mill

If your process waters pose problems of clarification... color removal... lime softening... or your boiler waters require hot process softening... ion exchange... demineralization...

...whether yours is an existing or new mill...

...let INFILCO's long experience and familiarity with the pulp and paper industry's needs show you the way to increased profits, greater production efficiency!

...rugged, dependable, accurate chemical feeders and slakers! (Send for Bulletins #215, 217, 250, 350).

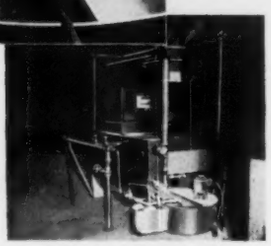
...for constant or proportional rate operation!

...clearer water faster, up to 80% savings in space with ...ACCELATOR* clarifiers! (Send for Bulletin #1825).

...soundly designed gravity and pressure filters! (Send for Bulletin #1825).

...ion exchangers and demineralizers! (Send for Bulletin #1960).

ACCELATOR CLARIFIER



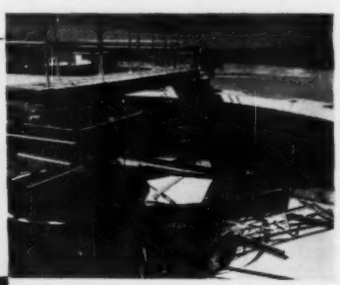
LIME FEEDER & SLAKER

FROM your mill

If suspended fillers, fibres, chemicals create problems of re-use or pollution...

...INFILCO savealls assure you of more profitable operation by reducing your material and heat losses!

...let us tell you about CYCLATOR* treating plants (Bull. #850)
...SEDIFLOTOR* flotation savealls (Bull. #6051)
...INFILCARB anthracite filters for green or white liquors
...simplified causticizing systems
...and many other types of profit-making equipment!



SEDIFLOTOR UNIT

INFILCO INC.

General Offices: Tucson, Arizona

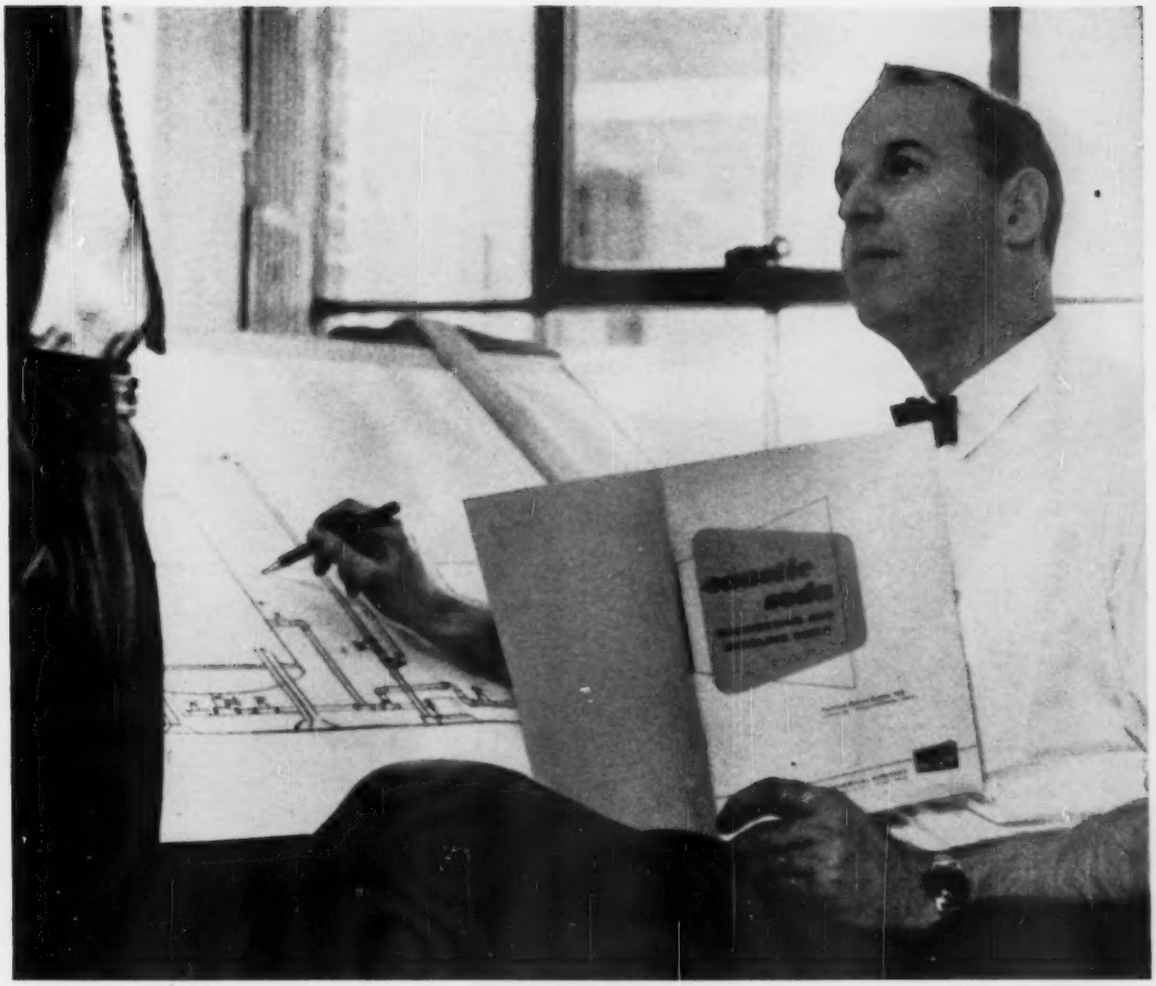
*The **one** company offering equipment for **all** types of water and waste treatment*

Field Offices throughout the United States and in Foreign Countries

Serving the pulp and paper industry with water conditioning equipment geared to today's competitive conditions!

INFILCO 5615PP

*REG. U.S. PAT. OFF.



NEW HOOKER MANUAL helps you store and handle caustic soda safely

This new manual gives you 40 pages of information and advice on how to handle and store liquid caustic soda safely, efficiently, and with minimum risk of contamination.

Here are some of the contents:

- ✓ Large, detailed diagrams of equipment to use in unloading, diluting and storing.
- ✓ Commonly used methods for unloading a tank car of liquid caustic soda, for diluting to different strengths, and for storing.
- ✓ A section on safety precautions and first aid.
- ✓ A section on materials of construction.
- ✓ 18 charts, graphs and tables to help you predict and control the behavior of liquid caustic under a wide range of operating conditions. These cover such properties as dilution temperature, vapor pressure, viscosity, specific heat, etc.

For your copy of this new manual, write us today or use the coupon.

HOOKER CHEMICALS PLASTICS

865W10

HOOKER ELECTROCHEMICAL COMPANY

Niagara Falls · Tacoma · Montague, Mich. · New York · Chicago · Los Angeles

HOOKER ELECTROCHEMICAL COMPANY
1901 Forty-seventh Street, Niagara Falls, N. Y.

Please send me a copy of Bulletin 102, *Caustic Soda Engineering and Handling Guide.*

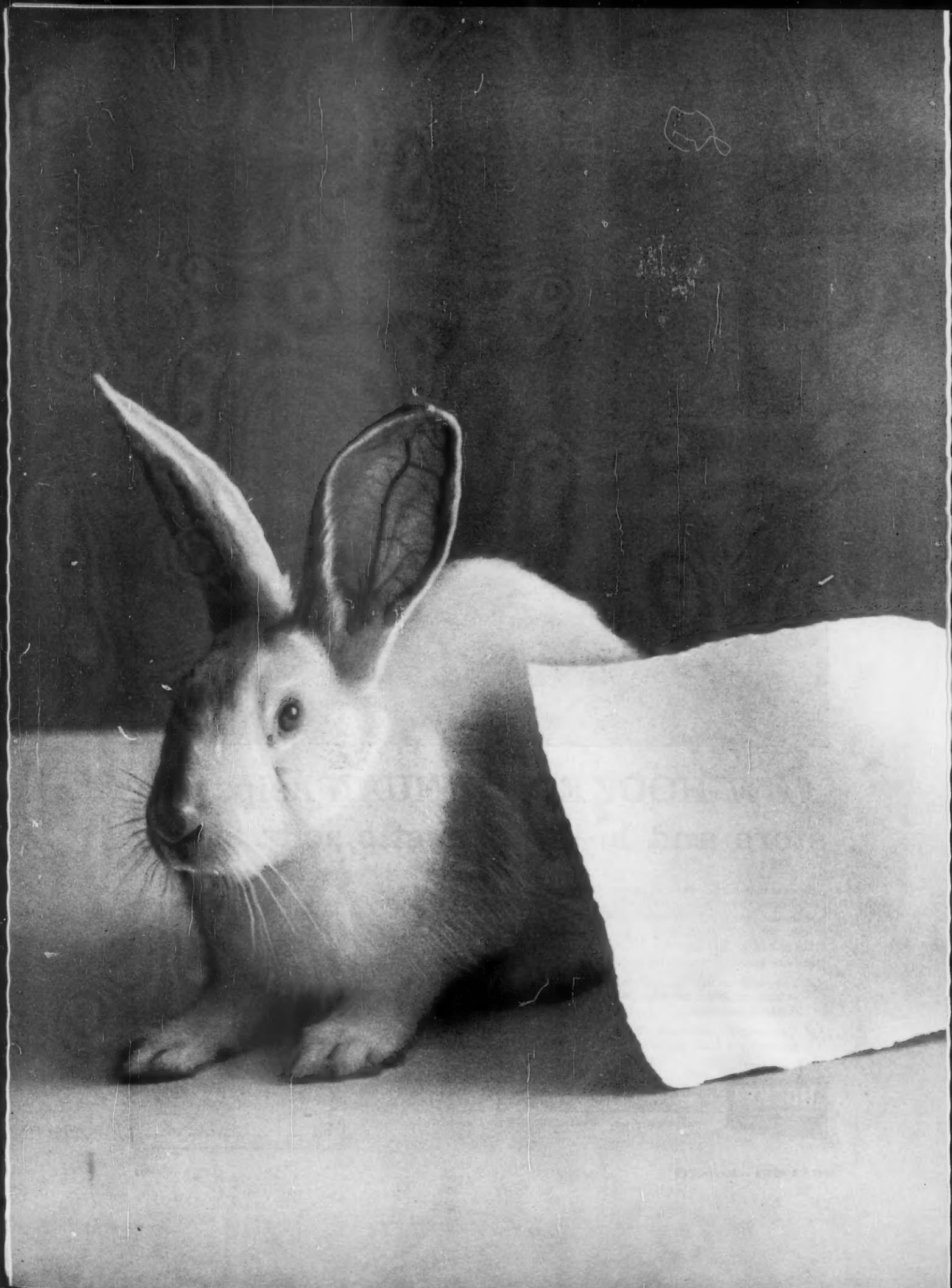
NAME.....

TITLE.....

COMPANY.....

STREET.....

CITY..... STATE.....



The whitest white you've ever seen!

New mill will bring you a dependable supply of highest-quality bleached kraft pulp.

Rising in record time, in a specially-created town in Alberta, the Hinton mill will provide a steady supply of bleached kraft pulp of superior quality. It will be ready in the early part of 1957 to turn out 430 tons a day.

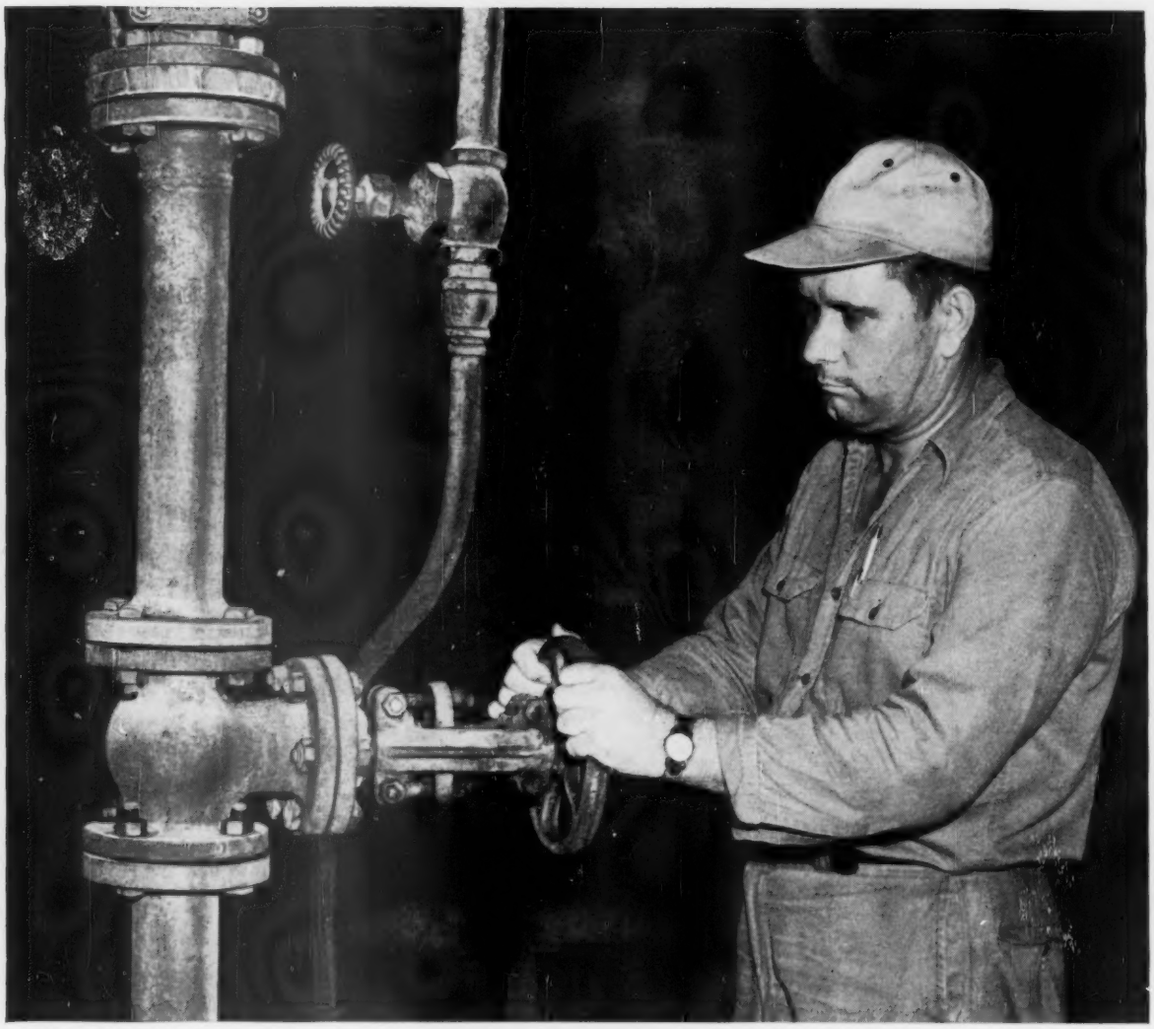
This pulp—St. Regis *Alberta Hi-Brite*—will give you remarkable brightness, with unusual opacity, strength, forming properties and cleanliness. Its flexibility will make it suitable for use as a versatile furnish in any sheet requiring bleached pulp.

4 million acres of adjacent forest reserves assure the mill a perpetual yield of spruce and lodgepole pine. These slow-growing softwoods produce the longer, thinner fibres famous for their excellent pulping properties.

The advanced multi-stage chlorine dioxide process, used only by St. Regis, gives *Alberta Hi-Brite* its gleaming whiteness and high brightness. The continuous digester method permits constant quality control and uniformity of output.

For full information on how *Alberta Hi-Brite* can improve the quality of your product, write to St. Regis Paper Company, Dept. PP-157, 150 East 42nd St., New York 17, New York.

St.Regis
PAPER COMPANY
150 EAST 42ND STREET, NEW YORK 17, N. Y.



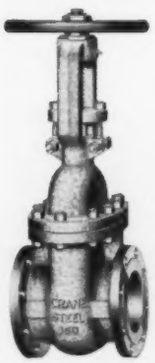
Better Valve Performance on Digester Gas-Off —because they're Crane

This major paper manufacturer can show you concrete evidence of "what's in a name" in valve performance . . .

The Crane 3-inch No. 47XR cast steel gate valve you see is one of several on digester gas-off service. It's a severe and exacting service—the valves are used to relieve liquor and turpentine vapors from the digesters, operating at 383° F. temperature at 100 psi.

The Crane gate valves have been in this service much longer than any of the other make of valves previously used. Yet, not one of them shows any sign of leakage around the seat, stuffing box or bonnet—closure is tight, sure and easy. From all appearances, they have a long way to go before they'll need the maintenance crew.

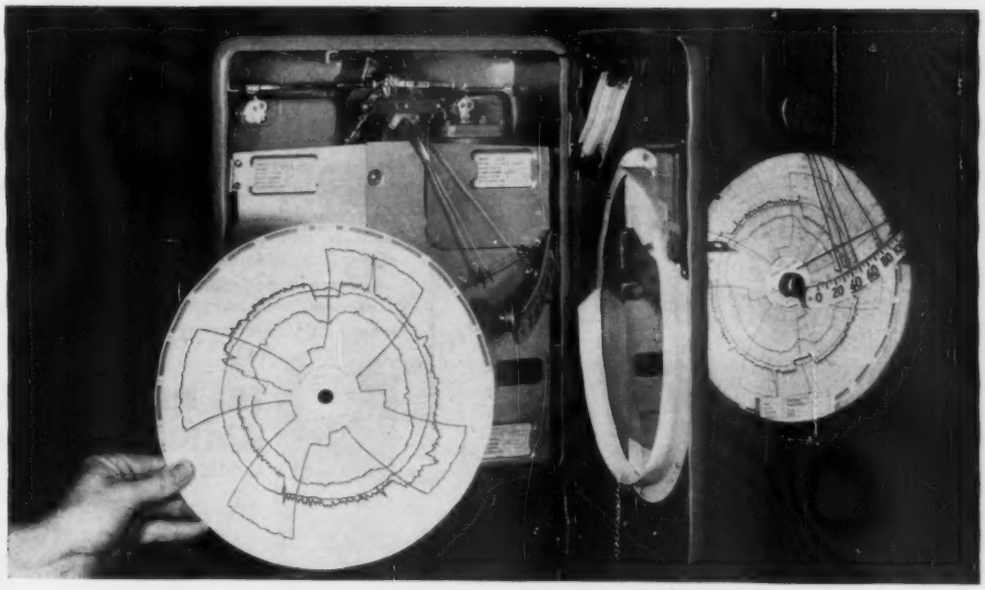
You're smart to choose from the big, broad, dependable Crane line when you order any valves and fittings. You're assured of finest quality at no extra cost. Get full information from your local Crane Representative, or write to address below.



CRANE VALVES & FITTINGS

PIPE • KITCHENS • PLUMBING • HEATING

Since 1855—Crane Co., General Offices: Chicago 5, Ill. Branches and Wholesalers Serving All Areas



Faithfully yours -

Clear, Continuous Records without Poisoning . . . on the New Bailey Recorder

★ Faithful chart records of measured variables are the key to a meaningful, dependable analysis of operating trends and conditions. Money spent for more accurate metering, for faster response, is money down the drain—*unless* it's matched with chart records that are equally accurate.

That's why these features of the new Bailey Recorder are important to you:

1. Bailey's exclusive sealed capillary-action inking system maintains continuous flow to the pen tip, and traces sharp, opaque, quick-drying records. "Poisoning" of intersecting records is practically eliminated; no blots or smears during operation or chart changing.

2. Pens are mounted on concentric centers, trace on parallel time arcs only 42/1000" apart. This simplifies analysis of two or more records.

3. Interchangeable plug-in receiver units permit practically limitless record-grouping combinations.

Write for Product Specification E12-5 and actual chart sample. P22-1

ONLY BAILEY OFFERS ALL THESE ADVANTAGES IN A SINGLE RECORDER

- Pre-calibrated plug-in receiver units
- Up to four pneumatic or electronic receivers —or two receivers and two integrators
- Any four variables on one chart—easily read and interpreted
- A full year's ink supply at one loading
- Faster shipment—from stock
- Minimum inventory of parts
- Minimum instrument investment for process cycle expansion or alteration

BAILEY
METER COMPANY
1037 IVANHOE ROAD
CLEVELAND 10, OHIO
Controls for Power and Process

BAILEY METERS
Controls for
TEMPERATURE
PRESSURE
GAS ANALYSIS
FLOW LEVEL
RATIO DENSITY

The fastest growing company in paper mill machinery

Now more than ever before, Manchester can meet your most exacting needs for better machines.

This is our second major expansion in the past year. It will more than double our capacity and insure continued service to our customers for many years to come.

We have built our nation-wide business on *high quality and dependable service*. Our advanced components and complete paper machines are produced in a modern, well-equipped plant by trained engineers and skilled workers.

Ask us to show you how we can help *make* money and *save* money for you.

THE MANCHESTER MACHINE COMPANY
MIDDLETOWN, OHIO

Middletown Firm Plans New Plant

Manchester Machine Buys Big Acreage Near Monroe

Purchase of a tract of land near Monroe to be used for expansion was announced today by James D. Boyd, president of the Manchester Machine Co. The Manchester company manufactures papermill machinery.

The 137-acre tract is at the Long Street-Garver Road, opposite the Monroe Lumber Co. The property is on both sides of the Pennsylvania Railroad tracks. The land was purchased from Mr. and Mrs. Joseph Riley.

Boyd said the property would be used to build a new manufacturing plant for the Manchester firm which has outgrown its present location on W. Central Avenue. He added that increased customer demand had doubled Manchester's production and sales.

The new plant will be modern in every respect, will provide for greatly increased capacity, and will be equipped with the newest, most up-to-date machine tools, according to Boyd. Details of the building and equipment will be announced later.

The Manchester Machine Co. is a wholly owned subsidiary of the Gardner Board & Carton Co. It was purchased by Gardner from the Bevis interests in August 1949. At that time there were about 20 employes. The paper machinery company now employs over 100 people and is one of the most rapidly expanding companies in the industry or in this area. It is estimated that the new plant will have about double the present number of employes.

Manchester Machine now occupies two buildings on W. Central Avenue, the former Enterprise Machine Shop and the Bevis building. The company also leases office space in the Middletown Federal Building.

In all, Boyd said, the firm now occupies approximately 75,000 square feet of floor area under "crowded" conditions.

It was inferred from his announcement that the new plant would afford at least double the amount of floor area contained in the present buildings and that construction would require an outlay of possibly two million dollars.

Mishap St
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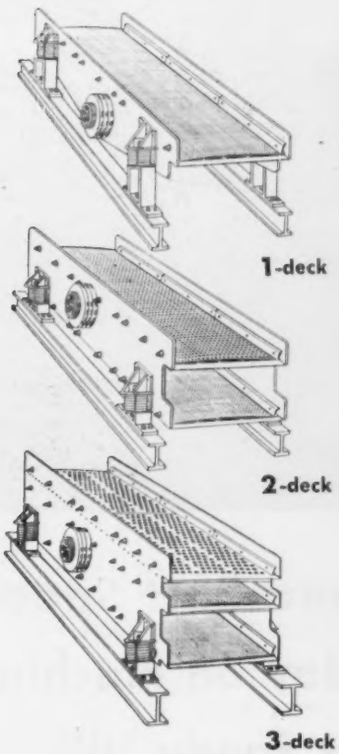
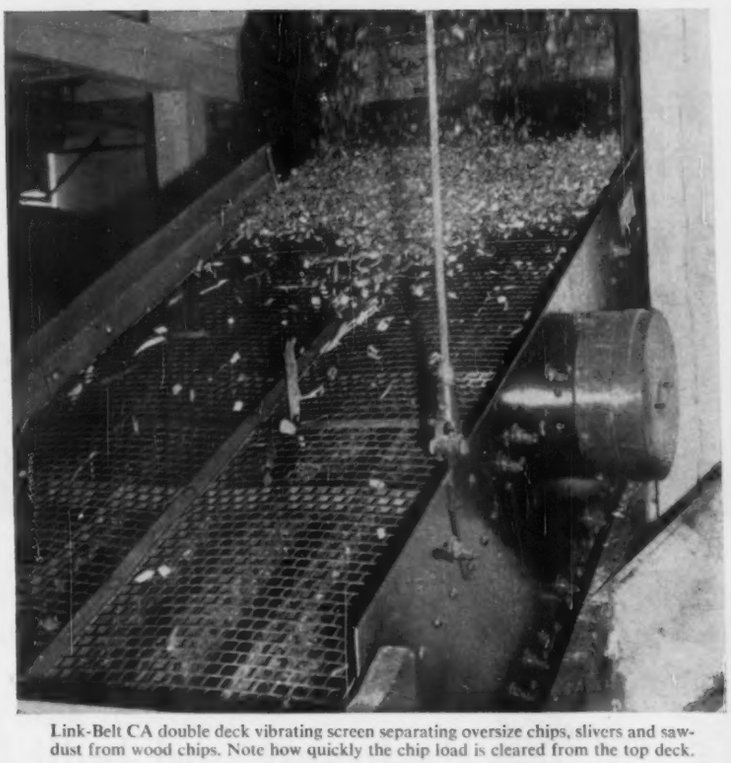
LINK-BELT CA Concentric Action Vibrating Screens

for high volume chip cleaning





Link-Belt CA double deck vibrating screen separating oversize chips, slivers and sawdust from wood chips. Note how quickly the chip load is cleared from the top deck.

Vibrating mechanism is grease lubricated and has two high capacity, self-aligning roller bearings. Efficient, frictionless labyrinth seals exclude dirt and abrasive dust. Spring-controlled centrifugal type counter-weight eliminates excessive resonant motion when starting and stopping.

Powerful screens thoroughly separate sawdust and slivers

For speedy, thorough cleaning of chips, the trend is to Link-Belt Concentric Action Vibrating Screens. Circular vibrator motion imparts lively tumbling action which is uniformly distributed across every square inch of the screen deck. The bed stratifies rapidly—every particle is accurately sized . . . slivers and sawdust sharply separated. Low maintenance costs are also winning preference for CA screens among pulp and paper men.

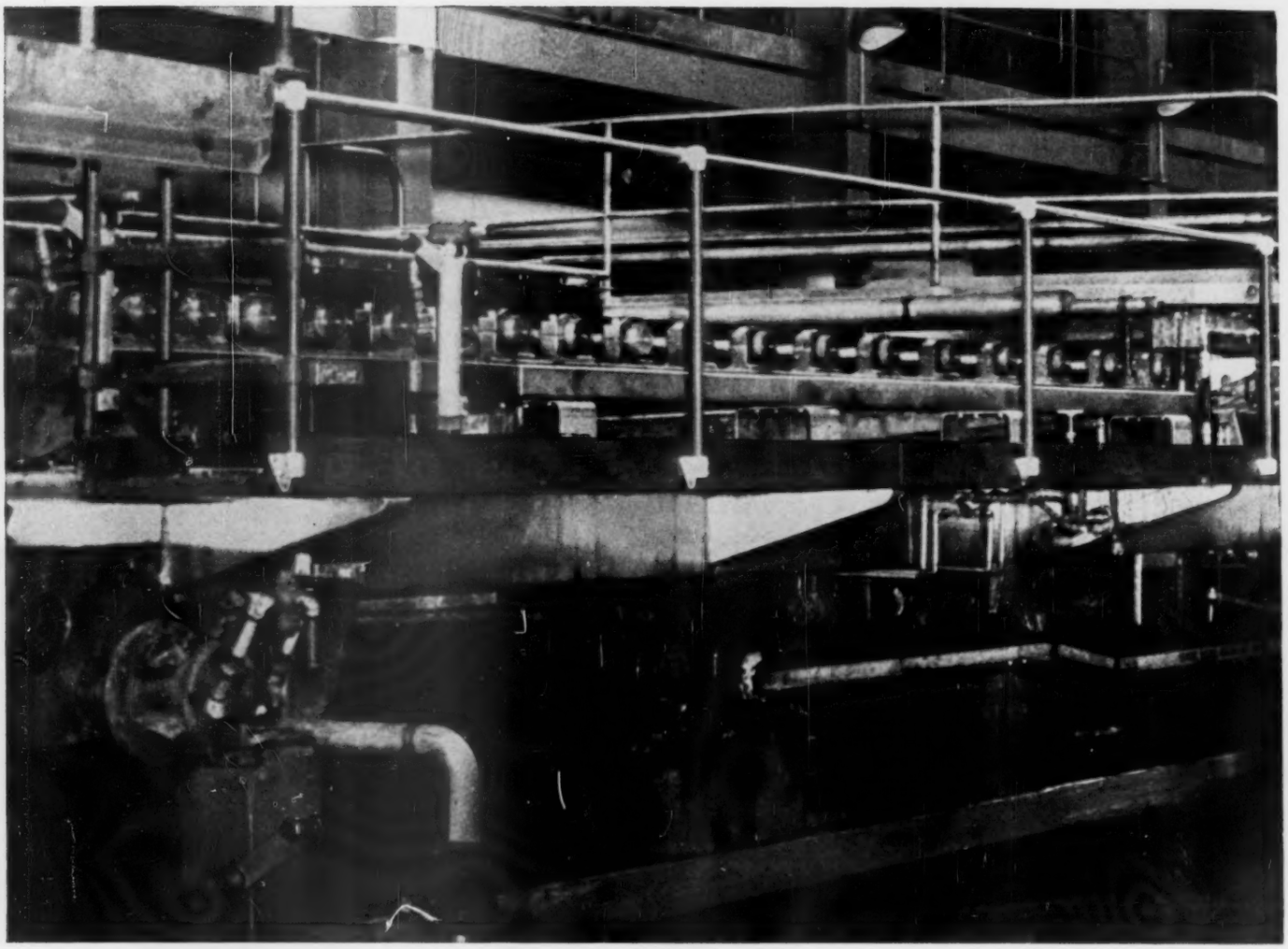
There's a size for every job—4 to 6 ft. wide by 8 to 14 ft. long, in deck arrangements as illustrated. Your nearby Link-Belt office has full information. Send for Book 2554. Write for your copy.

LINK-BELT

VIBRATING SCREENS

14,021

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants and Sales Offices in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World.

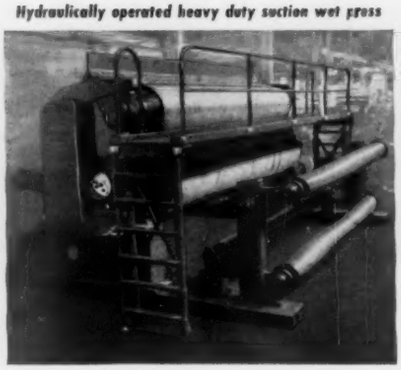


High Production and Fast Speeds are achieved every day on machines designed and built by Sandy Hill.

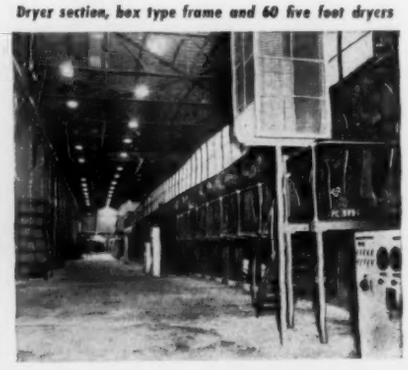
The decade including 1956 has seen many Sandy Hill machines installed in the United States.

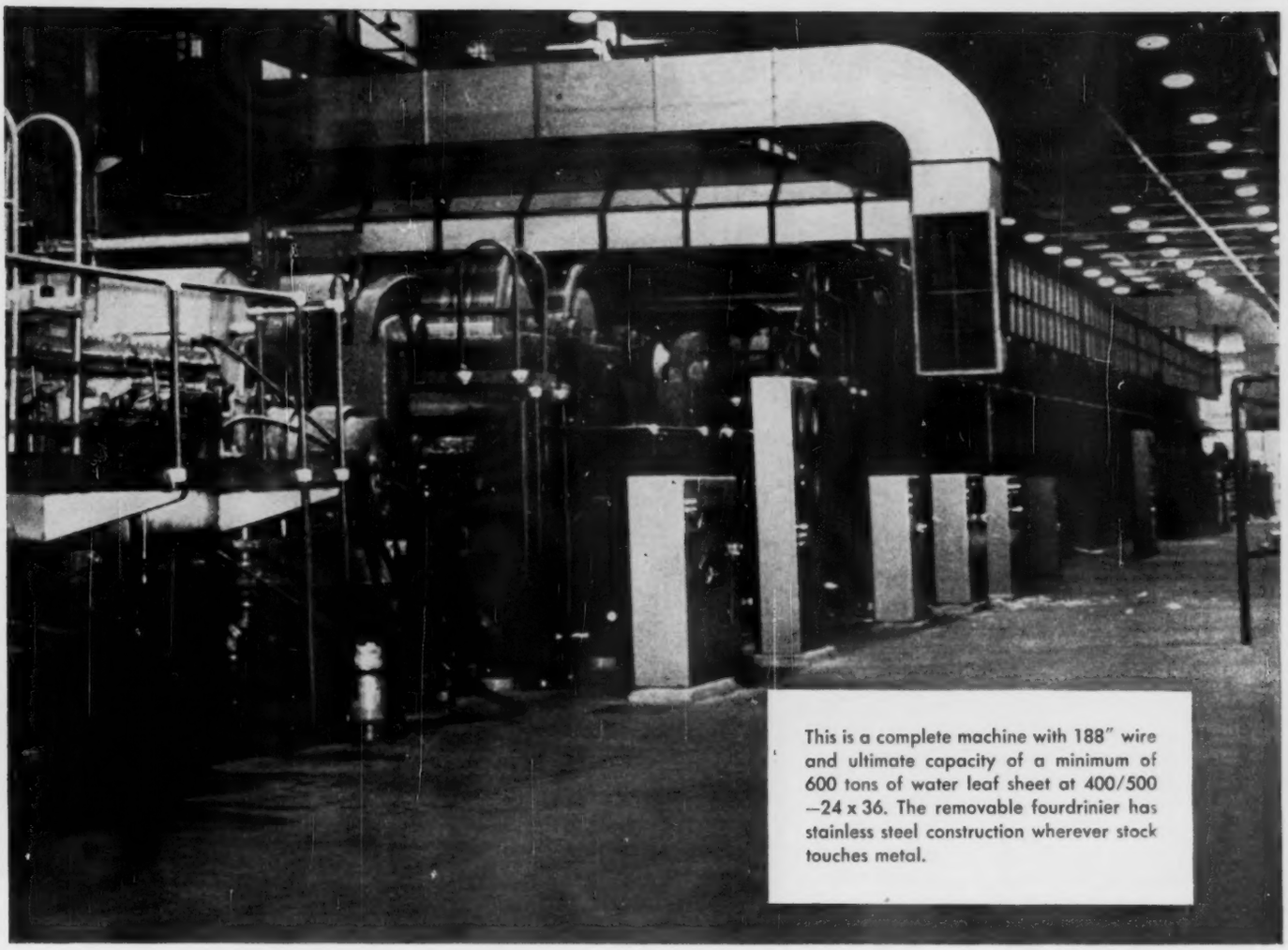
Fourdrinier and flow distributor for large tonnage

Hydraulically operated heavy duty suction wet press



Dryer section, box type frame and 60 five foot dryers





This is a complete machine with 188" wire and ultimate capacity of a minimum of 600 tons of water leaf sheet at 400/500 —24 x 36. The removable fourdrinier has stainless steel construction wherever stock touches metal.

Sandy Hill achievements include:

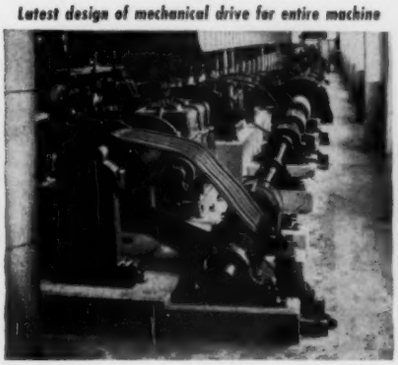
- **multiple manifold approach flow**
- **high speed and power mechanical drives**
- **removable fourdrinier**
- **high nip pressure presses**
- **heavy duty reels**

Sandy Hill's solution to your problems can be the resolution of basic difficulties

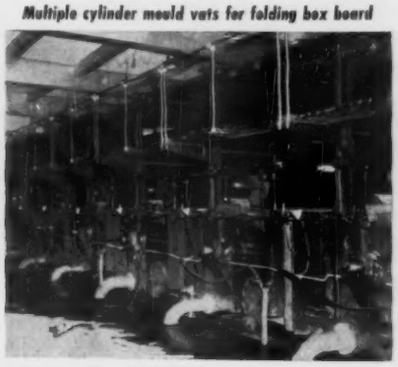
The Sandy Hill Iron & Brass Works

HUDSON FALLS, N. Y.

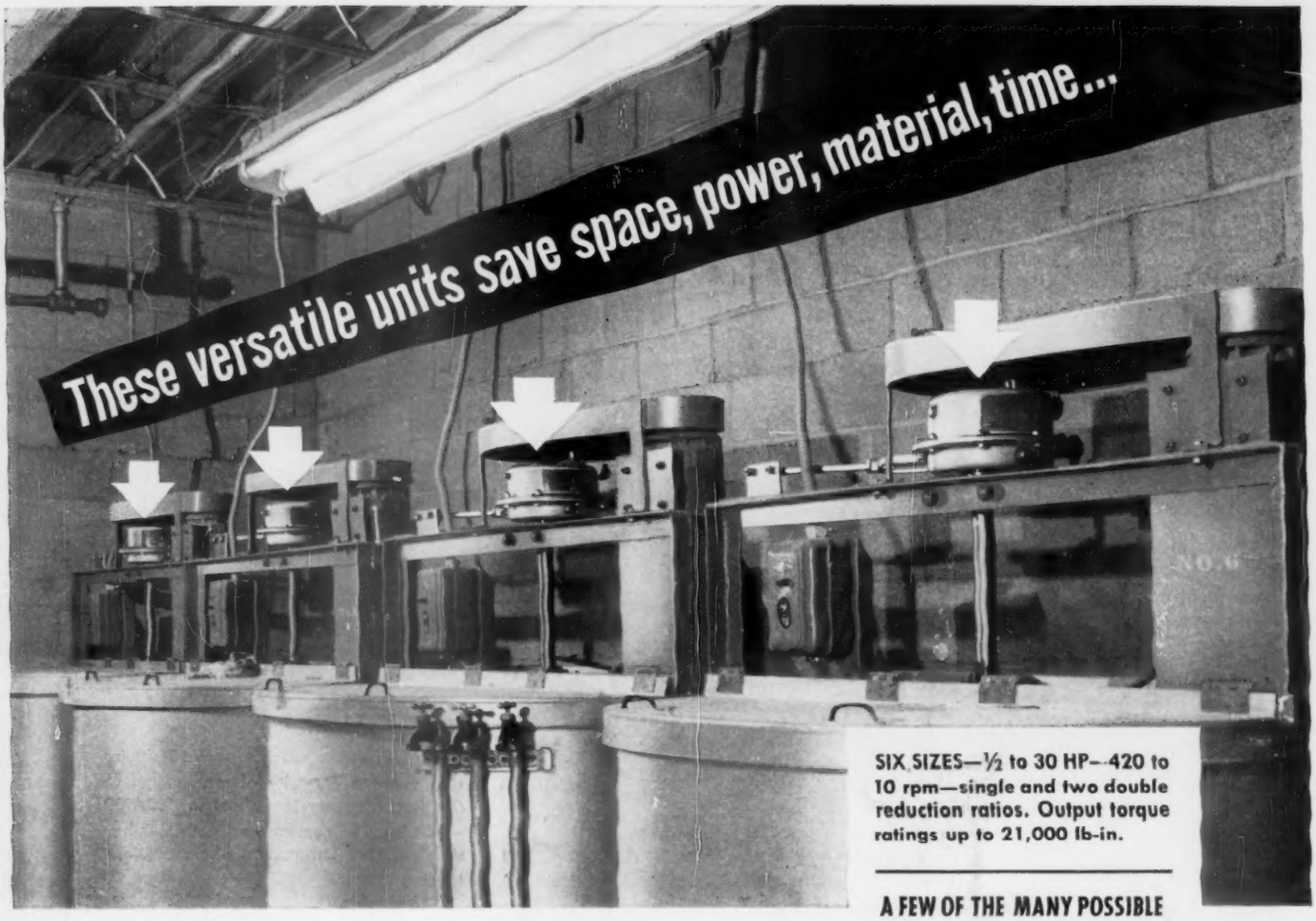
Latest design of mechanical drive for entire machine



Multiple cylinder mould vats for folding box board



Heavy duty reel for either board or paper



SIX SIZES—½ to 30 HP—420 to 10 rpm—single and two double reduction ratios. Output torque ratings up to 21,000 lb-in.

FALK ALL-STEEL Shaft Mounted Drives

The photograph above typifies the way FALK Shaft Mounted Drives furnish the economical solution to problems of efficient speed reduction in a limited space. Within their rated capacities, these versatile reducers are designed to drive any machine and to fit any space requirement.

FALK Shaft Mounted Drives mount on the driven shafts and are connected by V-belt or chain to any convenient rotating power source. Unlimited choice of output speeds between 420 and 10 rpm is made possible by varying the ratio of driving sheaves or sprockets.

These units, with precision-cut gears of highest efficiency, use a minimum of power. They need no adjustable motor bases or slide rails; thus they save material. And, because they are readily available and easily installed or moved, they save time. Best of all, they are backed by FALK's unmatched experience in precision-gear manufacture.

Promptly available from factory and distributor stocks, from coast to coast. Ask your Falk Representative or Distributor for details—or write us for **Bulletin 7101.**

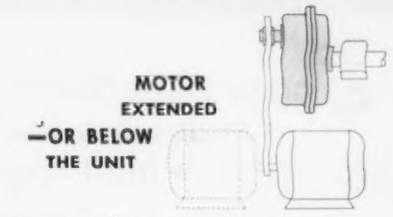
THE FALK CORPORATION, 3001 W. CANAL ST., MILWAUKEE 1, WIS.

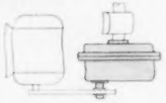
Representatives and Distributors in Most Principal Cities

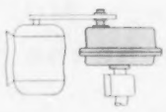
Manufacturers of

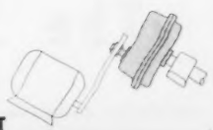
- Motoreducers
- Speed Reducers
- Flexible Couplings
- Shaft Mounted Drives
- High Speed Drives
- Special Gear Drives
- Single Helical Gears
- Herringbone Gears
- Marine Drives
- Steel Castings
- Weldments
- Contract Machining

A FEW OF THE MANY POSSIBLE DRIVING ARRANGEMENTS









FALK

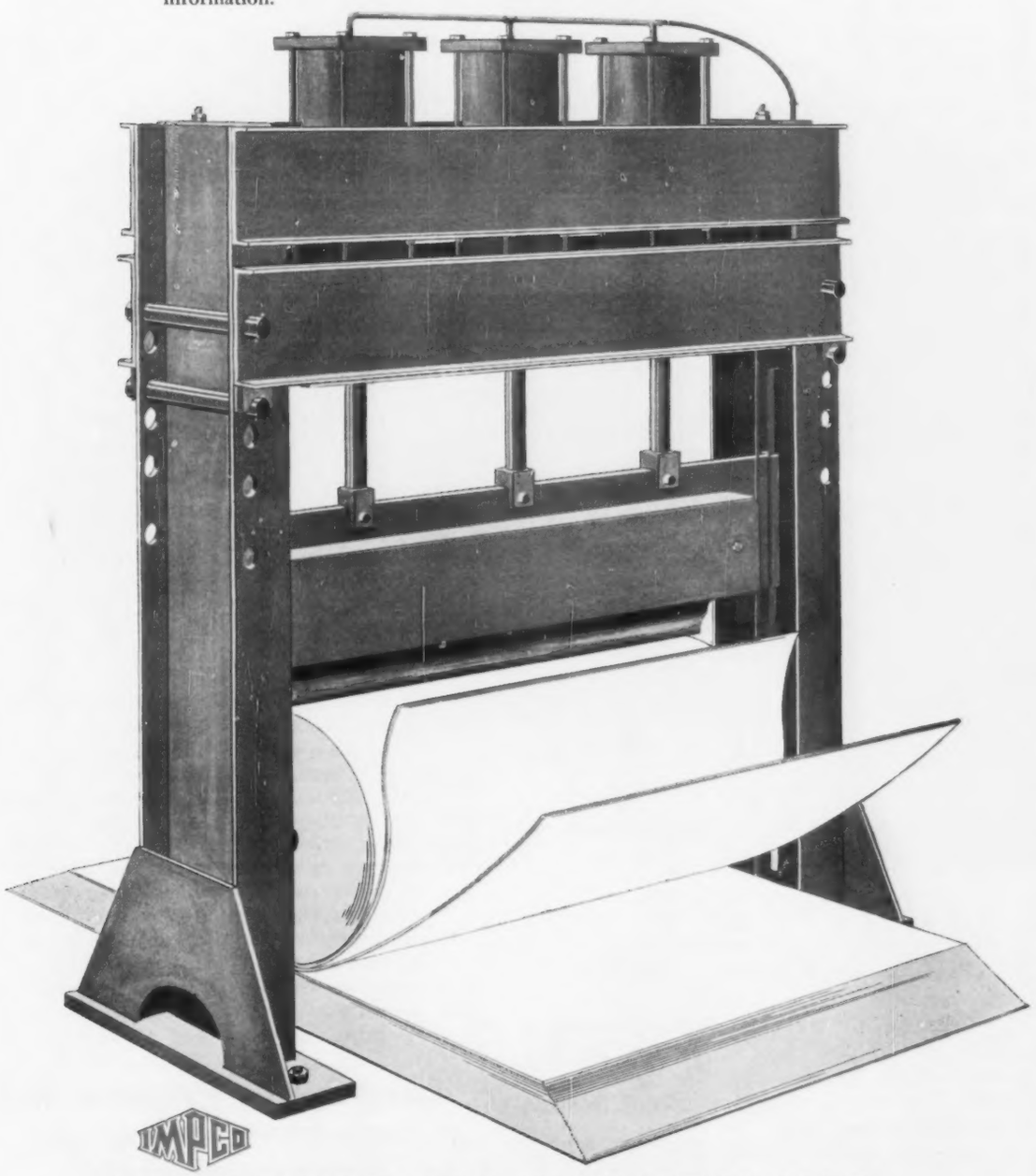
...a good name in industry

Available only on
New HUYCK FELTS*
The famous . . .
time-tested
4-D TREATMENT
Improves
TOUGHNESS . . . FINISH
AND OPENNESS
all at once . . .
by adding a 4th dimension
*Known in Canada as
KENWOOD FELTS
NEW!
HUYCK FELTS
FIRST IN QUALITY . FIRST IN SERVICE
E. C. HUYCK & SONS • Established 1870
Rensselaer, New York • Albertville, Alabama
Tamworth, New Hampshire • Carondelet, Missouri
IN CANADA: KENWOOD MILLS LTD.
Arnprior, Ontario • Established 1919
KENWOOD TEXTILE PRODUCTS

IMPCO GUILLOTINE ROLL CUTTER

IMPCO now offers this recently developed, mill-proven machine used for the rapid slabbing of off-standard rolls. We build this unit in three sizes to handle 60″, 72″ and 90″ maximum roll lengths, each capable of cutting rolls up to 60″ in diameter.

The overall height requirement of the largest model is but 12′ and occupies a floor space area of only 3′ x 10′. Send today for Bulletin J5-1 for complete information.



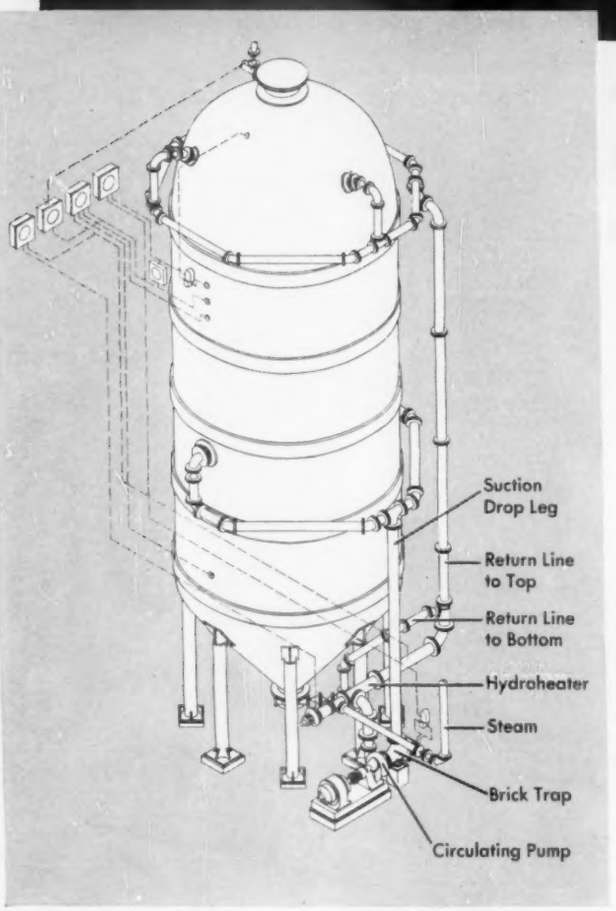
IMPROVED MACHINERY INC.

NASHUA, NEW HAMPSHIRE

In Canada, Sherbrooke Machineries Limited
Sherbrooke, Quebec

Why You'll Get a *Greater Yield* of Higher-Quality, More-Uniform Pulp

with the Chemipulp-KC Circulating System and Chip Distributor

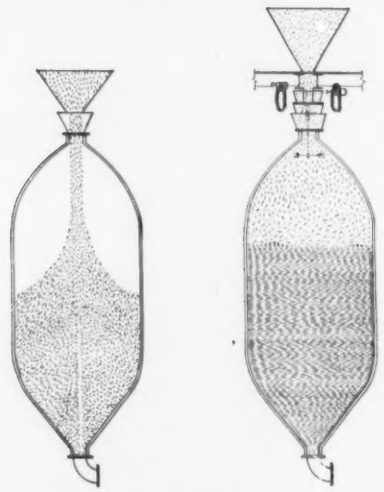


The Chemipulp-KC Circulating System

The drawing shows how the hot liquor enters the digester at both top and bottom and leaves at several points at the center. This, combined with uniform chip distribution, results in uniform cooking temperature throughout the digester.

Consequently, you don't have to overcook to take care of cool spots in the digester. Very little of the hemicelluloses are dissolved and lost. The cooking time is shortened. You get stronger, uniform pulp.

In actual operation, this system has increased the Mullen from 112 to 150 and the fold from 800 to 4,500 in addition to increasing plant capacity up to 45%. Write for complete information.



Ordinary filling methods, illustrated above at left, result in a conical chip pile with chips positioned so as to concentrate the flow of liquor along the central axis of the pile. As shown at the right, metering plate and distributing bats of the Chemipulp-KC Chip Distributor deliver the chips uniformly over the area of the digester. The chips lie in a horizontal plane which permits the Chemipulp-KC Circulating System to bring the entire contents of the digester to uniform temperature. This Distributor can increase the chip charge from 25% to 50% with uniform liquor circulation throughout the entire mass.

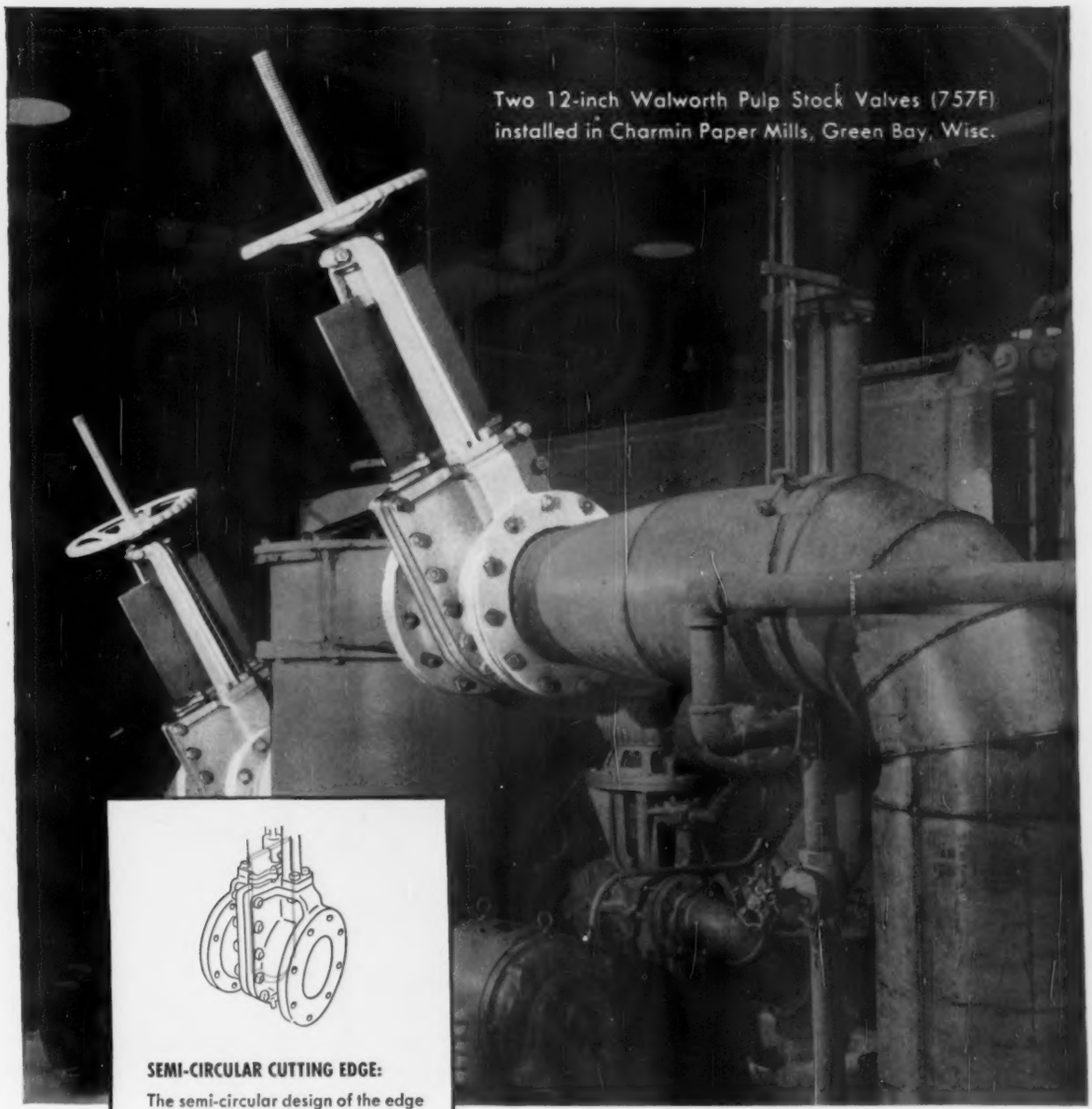
Chemipulp Process Inc.

Woolworth Building, Watertown, N. Y.

Associated with Chemipulp Process Ltd.
253 Ontario St., Kingston, Ont.

West Coast

A. H. Lundberg, Orpheum Bldg., Seattle
Lundberg-Ahlen Equipment Ltd., 146 E. Broadway, Vancouver



Two 12-inch Walworth Pulp Stock Valves (757F) installed in Charmin Paper Mills, Green Bay, Wisc.

SEMI-CIRCULAR CUTTING EDGE:

The semi-circular design of the edge of the gate affords more cutting surface than straight edged gates. The edge is beveled and hone sharpened and, coupled with the notched design of the body, shears through pulp fibers easily while valve is being closed.

WALWORTH PULP STOCK VALVES FOR CLOG-PROOF OPERATION

OTHER FEATURES: Disc guided during its complete travel; precision-machined surfaces; Standard A.S.A. face-to-face dimensions; easily accessible packing. Valves made of corrosion-resistant nickel cast iron, with either stainless steel or bronze trim. Rated 60 psi cold water pressure. Sizes 4 - 24 inches. See your Walworth Distributor or write on business letterhead for illustrated circular.

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For higher wet strength with minimum add-on...

SCRIPTITE* 40

Increased cationic effect of new Monsanto resin assures more complete exhaustion!

Scriptite 40 is a *new* concept in urea formaldehyde resins for paper finishing. Extensive mill trials have demonstrated that this Monsanto urea resin provides special advantages in improved performance over competing urea resins.

Scriptite 40 will impart outstanding wet strength for your paper product—and at the same time improve dry tensile, mullen, wet rub resistance, dimensional stability and folding endurance.

Because this new water-soluble urea-type resin has been made more cationic, it is strongly attracted to the cellulose, assuring high efficiency in application. Scriptite 40 provides faster cure, and paper products maintain a higher wet strength value with less resin add-on than is usually required.

For laboratory sample of Scriptite 40 and technical bulletin, write to Monsanto Chemical Company, Plastics Division, Room 925, Springfield 2, Mass.

The Monsanto Line of Paper Resins also includes

SCRIPTITE 54 . . . *for outstanding water resistance and both wet and dry rub resistance*

SCRIPTITE 52 . . . *in combination with formaldehyde to give water resistance to folding boxboard and to jute liner*

SCRIPTITE 50 . . . *for unsurpassed printability and improved surface characteristics on boxboard*

SCRIPTITE 33 . . . *a melamine wet-strength resin*

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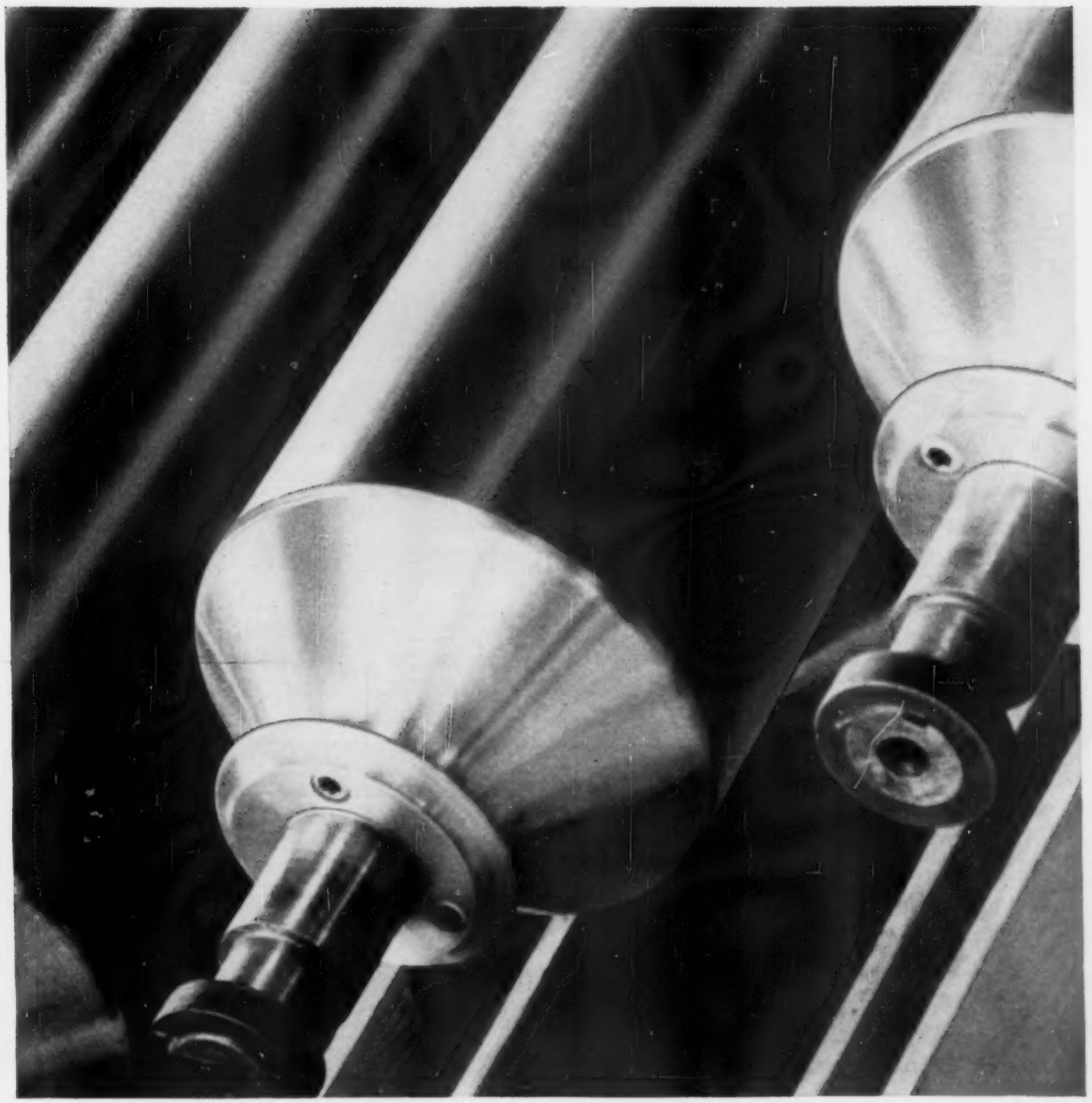
*SCRIPTITE: REG. U. S. PAT. OFF.



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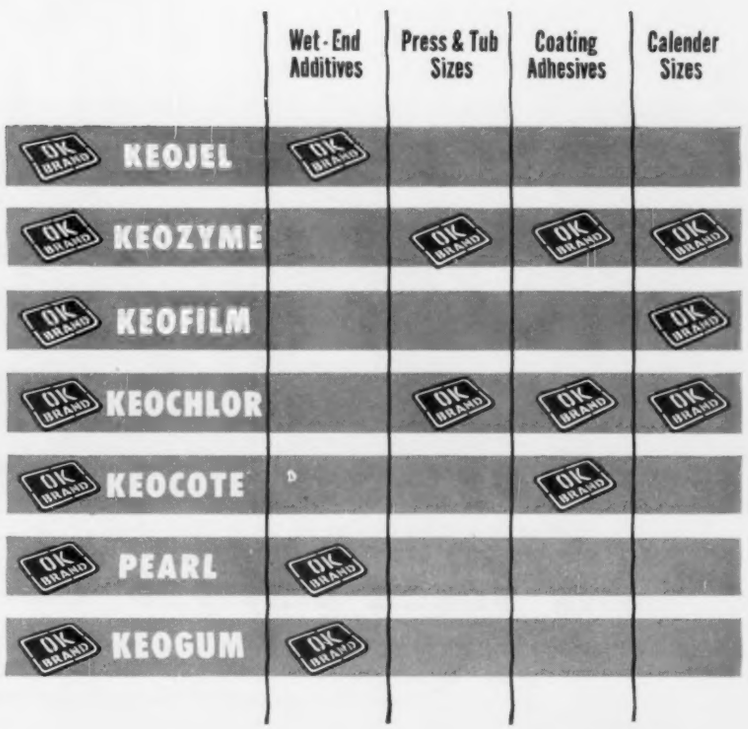
Craftsmen in rubber
RUBBER ROLLS with a REPUTATION

...for superior paper

Use OK BRAND Starches at no extra cost

the complete paper mill line



There's an OK Brand product especially formulated for every paper mill operation requiring starches and adhesives ...and there's no extra cost for these top-quality OK BRAND products.

There's no extra cost for Hubinger Technical Service either. If your mill needs a special starch product, phone or write for a Hubinger paper-starch technical service representative. He will be glad to help you solve your starch problems. You'll find him OK too.

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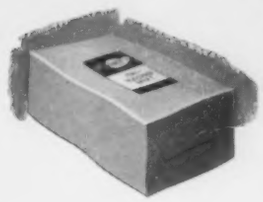
HUBINGER QUALITY PRODUCTS 76 YEARS From CORN



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to supply exacting wood pulp needs

It takes modern equipment . . . Buckeye has the latest at their new Foley, Florida mill. It takes a continuing supply of pulpwood . . . Buckeye has a 745,000-acre tree farm plus other sources. It takes unending research . . . Buckeye technical personnel and facilities are unsurpassed in the pulp field. It takes know-how . . . Buckeye experience goes back to 1920 as the first manufacturer of pulp from cotton linters. It takes reliability . . . Buckeye's reputation has been built on continuous and faithful satisfaction of customer needs.

If these qualifications match your requirements for a wood pulp supplier, we'd be glad to have you write or phone us.

BUCKEYE CELLULOSE CORPORATION, Memphis 8, Tenn.

Wood Pulp Plant at Foley, Florida
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BUCKEYE PULP

Bleached and Semi-Bleached Kraft
from Southern Pine

Simplest pneumatic controller to use and maintain

Bristol gives you improved stability of control action –but keeps basic simplicity of Series 500 Controllers

Bristol Series 500 Pneumatic Controllers are the easiest controllers on the market to use and maintain–still the most dependable and trouble-free.

The reason? The basic simplicity of the operating mechanism. *That* hasn't changed in the years since we introduced this long-time favorite among instrument men. Reason No. 2: they are equipped with famous Bristol measuring elements.

Easy calibration

It's this foolproof simplicity of the control system that makes calibration so easy on Series 500 controllers. *Only one* service adjustment is required and provided to exactly calibrate the control system. The control system can be completely disassembled and after reassembly (even with replacement of parts) can be restored to precise calibration with this *one* adjustment.

No special tools are required. A ¼-inch wrench is all that's needed.

The 500's completely interchangeable parts, accurately designed and manufactured to extremely close tolerances, make possible this built-in calibration.

And check these features:

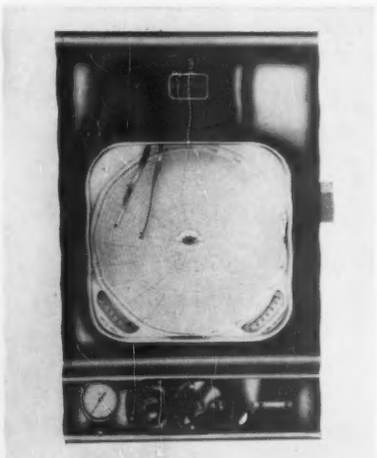
Improved control stability—advanced automatic control techniques have been applied by Bristol engineers to improve stability of control action in the new Series 500W Controllers.

Wide-band models offer choice of ½ to 400% proportional band with simple band shift.

True zero derivative setting—exclusive with Bristol.

Reset action stops in reset models—again a Bristol exclusive—prevent loss of control due to prolonged deviation from set point.

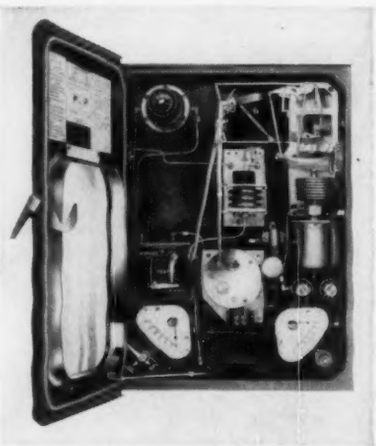
Four-position internal transfer station with automatic, manual, test, and service positions, plus pressure-matching button and manual pressure regulator, for maximum convenience in process control.



BRISTOL'S® SERIES 500 CONTROLLER, shown here with four-position transfer station. Internal station also available.

Complete data available

Write today for engineering data on Bristol's Series 500 controllers for your critical control problems. They're available for *automatic control of temperature, pressure, vacuum, draft, absolute pressure, liquid level, humidity, pH value, electrical measurements, and mechanical motion.* The Bristol Company, 142 Bristol Road, Waterbury 20, Conn.



FOUR-POSITION INTERNAL TRANSFER STATION shown here in interior view of Series 500 Controller. Permits remote manual control, testing and servicing without disconnecting instrument.

YOU CAN GET THESE CONTROL MODES:

1. **Fixed narrow band** (on-off)
2. **Proportional band**—½ to 100% and ½ to 30%.
3. **Reset with wide band**—rates 0.1 to 10 or 1 to 300 repeats per minute. Proportional band ½ to 400%.
4. **Derivative (rate)**—½ to 100% proportional band. Derivative time 0.2 to 20 min., *plus zero derivative setting.*
5. **Reset plus derivative**—proportional band and reset rate as in "reset" above. Derivative time as in "derivative" above.

YOU CAN HANDLE THESE CONTROL PROBLEMS:

1. Cascaded control 2. Selective control 3. Ratio control 4. Time-program control 5. Pneumatic transmission.

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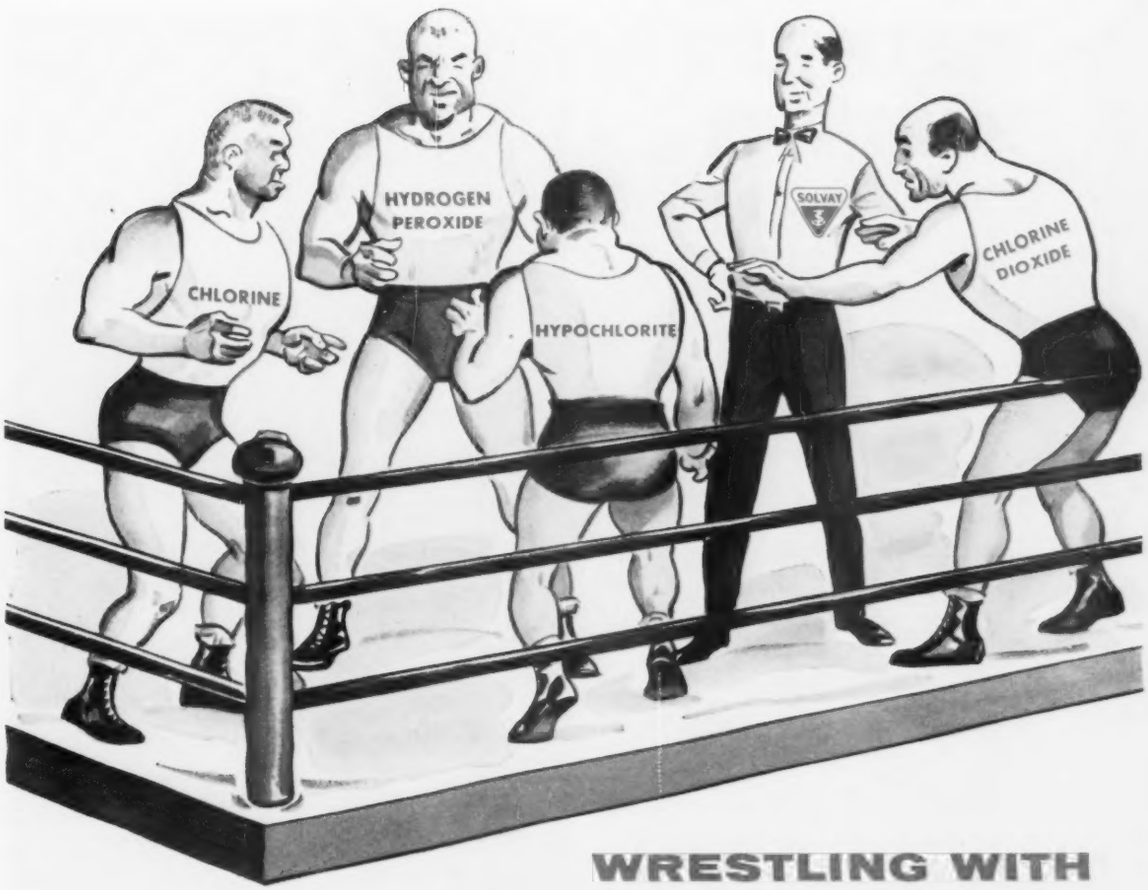
BRISTOL *TRAIL-BLAZERS IN PROCESS AUTOMATION*

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS



WRESTLING WITH A BLEACHING PROBLEM?

For the right decision-see SOLVAY ...who now offers all 4 methods

Before reaching a bleaching decision, check the field . . . all the latest developments. SOLVAY is in a position to offer facts and unbiased recommendations on all four methods to assist you in deciding. With the addition of hydrogen peroxide to its line, SOLVAY is the one producer offering all four methods.

But objective counsel is only one reason for seeing SOLVAY. Besides supplying products that have set the industry's quality standards for over 75 years, SOLVAY helps you get the most out of these products . . . through authoritative literature, practical application aid by field technicians and the research facilities of the world's largest alkali laboratories. All are at your service—at no extra cost—through SOLVAY Technical Service.

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Potassium Carbonate • Sodium Nitrite • Caustic Potash
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Ammonium Chloride • Methylene Chloride • Methyl Chloride
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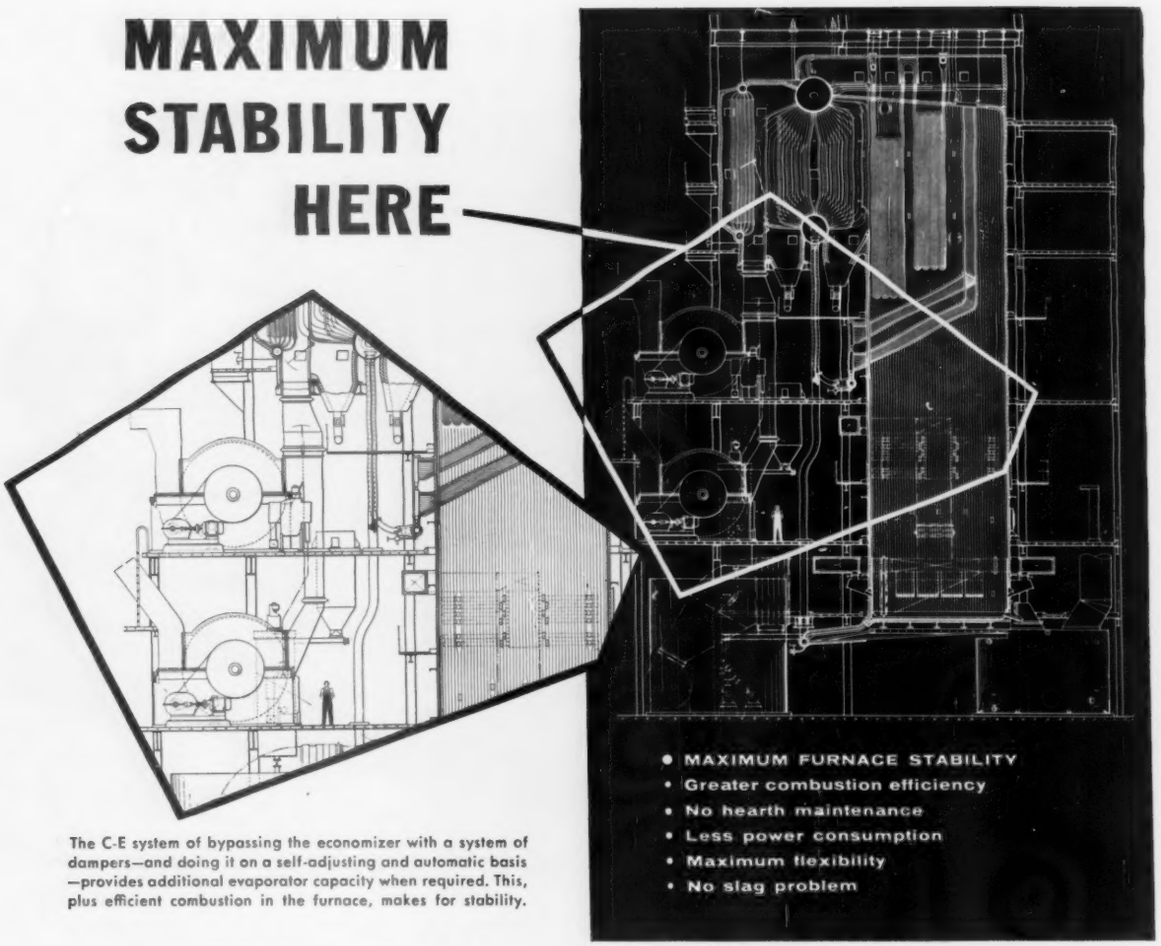
MAXIMUM STABILITY HERE



The C-E system of bypassing the economizer with a system of dampers—and doing it on a self-adjusting and automatic basis—provides additional evaporator capacity when required. This, plus efficient combustion in the furnace, makes for stability.

Furnace stability is a function of black liquor density and temperature – and fuel-air ratios. In a word, stability means – *control*. The C-E Recovery Unit offers you maximum stability through *exact* control. Here's how:

1. Maximum liquor density is assured because the capacity of the evaporator used with the C-E Recovery Unit can be continuously and automatically adjusted to compensate for differences in the density of incoming liquor. A system of bypass dampers is used to bypass the economizer when additional heat is required for evaporation. Thus, limited multiple effect evaporator capacity presents no deterrent to stable furnace conditions. Normally, when liquor density from the multiple effect evaporators is 50% or greater, the density of the liquor, as fired, ranges between 68 and 70%. With soda liquors, the density ranges as high as 80% solids, as fired.

2. Black liquor temperature is controlled accurately and automatically using a simple and reliable system of black liquor heaters.

3. Fuel-air ratios can be automatically and accurately controlled by a system that adjusts the flow of air to the flow of fuel in just the right proportions to maintain the furnace atmosphere required for high reduction. The system has a sensitive response nearly impossible to duplicate by manual means. The C-E Recovery Unit was the first to include this complete combustion control equipment.

• • •

Taken together, these three items spell maximum furnace stability – even at high overloads.

From the smallest to the world's largest, every C-E Recovery Unit offers you consistently high reduction performance, uniform fuel bed, efficient burning, no hearth maintenance, a cleaner boiler, uniform gas flow, less steam for soot blowing, cleaner superheater surface, greater overload capacity, less power consumption and minimum stack losses. Good reasons all, why – before you buy – you should *SEE C-E.*

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Steam Generating Units • Nuclear Reactors • Paper Mill Equipment • Pulverizers • Flash Drying Systems • Pressure Vessels • Home Heating and Cooling Units • Domestic Water Heaters • Soil Pipe

Created by Papermakers for Papermakers

Albacel is bleached pine sulphate . . . the cleanest pulp of its kind available from any source. Chlorine dioxide bleaching gives it outstanding strength and excellent brightness. Albacel is produced at Riegel Carolina's pulp mill at Riegelwood, N. C., with every refinement and control known to modern pulp manufacture.

Riegel Carolina Pulps

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Not One, or Two, but ... ALL THREE

A triple triumph! That's what makers of decorative laminates can achieve with Brown Company's

1. Nibro-Cel® saturating paper.
2. Print sheets made of scientifically blended SOLKA® Pulps.
3. Overlay sheets made of SOLKA Pulps.

All three of these papers require specification pulps with an unusual balance of properties ... properties without which decorative laminates for table tops, counters, bars, and wall panels might never have been so highly successful.

Nibro-Cel was developed by Brown Company technicians in answer to the demand of manufacturers for a saturating paper assuring top speed production. There is none better for the job.

Leading manufacturers in the technical fields of cellulose conversion constantly come to us for specification pulps to be used for print and overlay sheets and other fine specialty papers.

With a wide selection of species in its vast timberlands, unexcelled research facilities, highly skilled technical personnel, and modern quality control procedures, Brown Company will help you solve your fibrous cellulose problems. Write Dept. PC-1, our Boston office.

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EASY TO USE, TOO...

The most powerful one-man chain saw you can own

7 HORSEPOWER

29 POUNDS

This picture shows how easily one man and the new Homelite 7-29 can go anywhere, cut anything from the biggest timber to the smallest tree.

With 7 horsepower packed into only 29 pounds, the Homelite 7-29 has power enough to do a real production job in the heaviest timber. Yet it's easy to carry through the roughest terrain and light enough for limbing or cutting in *any* position. It starts fast and keeps producing under the most grueling weather conditions.

With the new Homelite 7-29 you can take down trees 10 feet in diameter fast . . . get more cutting with less fatigue. Ask your dealer for a free demonstration!

Complete Line of Chain Saws for every Cutting Job

Model 17 — an all-purpose saw that brings down trees up to 4 feet in diameter. Available with special brush cutting and clearing attachments for complete versatility. 3½ horsepower, 20 pounds.

Model 5-20 — All the versatility of the 17 with added power. 5 full horsepower — 20 pounds. Brings down trees up to 6 feet in diameter.

Model EZ — lightest, most powerful direct drive chain saw ever developed. Only 19 pounds, full 5 horsepower. Brings down trees up to 3 feet in diameter.

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A DIVISION OF TEXTRON INC.

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Manufacturers of Carryable **PUMPS • GENERATORS • BLOWERS • CHAIN SAWS**

In Canada: Terry Machinery Co., Ltd.

With the flick of the wrists

. . LOADS 3 CORDS OF PULPWOOD IN 6 MINUTES!

CHECK THESE EXCLUSIVE HOPTO FEATURES

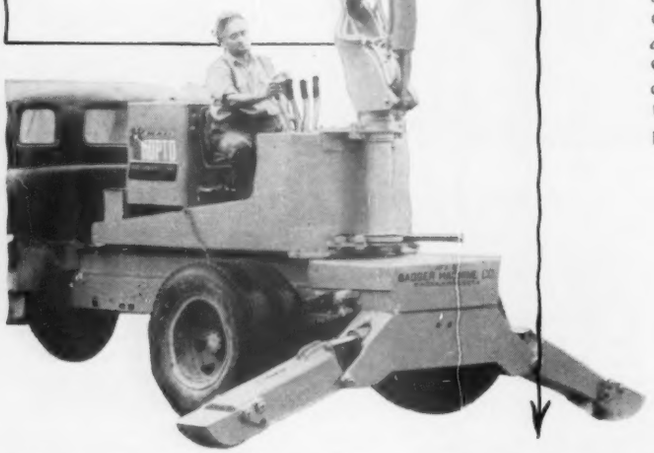
- Variable speed swing control turns boom through 307°.
- Double relief valve in swing circuit cushions boom swing for faster, safer operation.
- Full 18-foot clearance with a quarter cord of 8-foot pulpwood.
- Heavy-duty hydraulic system with double wire braided hoses and heavy-duty pipe fittings on all high pressure lines.
- Built-in relief valve in 1500 PSI system.
- All controls conveniently located for operator. Boom is never over or above operator.
- Highly mobile. Mounts on any one-and-a-half ton or larger truck!
- Long reach! Maximum surface reach on ground line is 17 feet, 15 feet at 12-foot height. All measurements from boom mounting.
- Positive power on Grapple and positive down pressure assures full grapple every time.
- Grapple available for both 8 foot and 4 foot length pulpwood.

HOPTO

Completely Hydraulic

LOG GRAPPLE

18' CLEARANCE



HOPTO BREAKS THE HANDLING BOTTLENECK

Conveniently located face-forward levers actuate every movement of this work-hungry grapple! HOPTO mounts on any one-and-a-half ton or larger truck . . . gives you a highly mobile, *low-cost* unit. Operator levels HOPTO on individually operated hydraulic outriggers from his regular operating position. Set-ups are quickly and conveniently made for safe operation.

30 SECOND LOADING CYCLE!

HOPTO reaches out 15 feet beyond boom mounting to take quarter-cord bite from largest truck or gondola, quickly swings up to 307°, and returns for another load, *all in 30 seconds!* HOPTO loads as many as seven railroad cars in a single day! It's the fast-cycling, completely hydraulic unit. Exclusive HOPTO safety engineered features and ease of handling recommend it as the low-cost pulpwood handler.

WRITE TODAY for complete information and name of nearest dealer!

BADGER MACHINE COMPANY

DEPT. X, WINONA, MINNESOTA

SOLD AND SERVICED IN NEW ENGLAND BY:

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RUSSELL ROAD, ROUTE 20 • WESTFIELD, MASS.

AT THE MILL OR IN THE WOODLANDS — there's a Link-Belt Speeder, either crawler or rubber-tired, ideally suited to mechanize pulpwood handling. All models have hydraulic-power steer, easy access for low-cost maintenance and service.

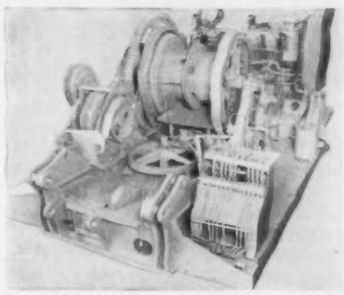
Increasing cycles per shift

Standard on every Link-Belt Speeder, Speed-o-Matic power hydraulic controls minimize operator fatigue. Response is fast, positive, precise

Exclusive with a Link-Belt Speeder, this true power hydraulic control system allows the operator to put his machine through its paces at the flick of the wrist. He's not subject to costly end-of-the-shift letdown . . . stays fresh, pushes his machine to its high limit throughout the shift.

Hydraulic-actuated clutches are self-compensating for heat and normal lining wear. Kick the engine over and go to work. There are no frequent stops for clutch adjustments.

It's advantages like these that put Link-Belt Speeder years ahead of the field — in productivity, in low maintenance and service costs. Start having your equipment dollars earning bigger returns. See your Link-Belt Speeder distributor now. Or write: Link-Belt Speeder Corporation, Cedar Rapids, Iowa. 14,322



MORE USABLE HORSEPOWER than other machines using the same make and model engine. Yet a Link-Belt Speeder remains well within the engine manufacturers' recommended operating speeds. It's possible because a Link-Belt Speeder is an extra-strength machine, designed and built to take full advantage of an engine's available power. This extra strength is evident in the size and quality of shafts, gears, clutches and structural members.

TRUE POWER HYDRAULIC CONTROLS—a Link-Belt Speeder exclusive, Speed-o-Matic power hydraulic controls, transmit pressure through oil directly to the clutches . . . eliminate over 150 wearing mechanical parts. Clutches engage smoothly, positively—without jerk, jump or lag. Oil is maintained at proper pressure by an engine-driven hydraulic pump.

It's time to compare . . . with

LINK-BELT SPEEDER

Builders of a complete line of shovel-cranes . . . with exclusive Speed-o-Matic power hydraulic controls

saves you $1.00 per cord or more!

Your big savings start from the time cutters stack your pulpwood in quarter cord or larger piles, when you mechanize with an International Drott Skid-Grapple. You don't have to touch it again by hand!

Just slide the Skid-Grapple's lower prongs under the woodpile. Apply exclusive triple-power, pry-action break-out—using the big Drott-designed skid-shoes *on the ground* as the fulcrum point. Clamp onto the load securely with the exclusive top grab-arm.

And even if the logs or pulpwood are mudded in or frozen down—you'll get big payloads every time!

You have the hydraulic power, the "reach," and positive load control to pile high into trucks. Separate top grab-arm control lets you spot-place each grapple-full of wood with ease, safety, and accuracy!

You have big, cost-cutting capacity, too. The International Drott TD-9 pulpwood Skid-Grapple, for example, loads up to one cord of 8-foot pulpwood in each pass—240 cords, or more daily, with only a one-man "crew"! And whatever length your pulpwood is cut, there's an International Drott Skid-Grapple size to handle it efficiently!

Compare your present pulpwood loading or repiling method to International Drott Skid-Grapple efficiency—and calculate the big cash difference. *Producers report it's $1.00 or more per cord, in favor of the Skid-Grapple method.* Prove what it means to be able to switch a Skid-Grapple with a Four-In-One or standard Skid-Shovel bucket—and have a multiple-duty, road-building, excavating, and material-handling unit. Try exclusive, shock-swallowing Hydro-Spring advantages. See your International Drott distributor for a Skid-Grapple demonstration!

International Harvester Company, Chicago 1, Illinois
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INTERNATIONAL HARVESTER

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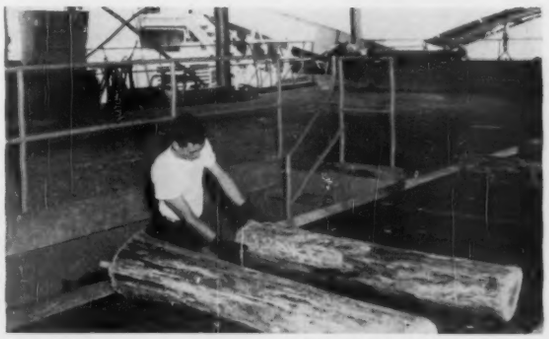


I.P. SPEAKER AT NEW ORLEANS PRAISES RUBBER BELT USE AFTER BARKERS . . . Here is an example in a PULP & PAPER picture obtained at the Buckeye Cellulose pre-hydraulized kraft dissolving pulp mill in Foley, Fla., now being doubled in size.

AT LEAST 8 MILLS IN THE SOUTH NOW USE FLUMES LIKE THIS . . . CHATTEN HAYNES, International Paper's Coordinator of Pulp Mfg., told about advantages of flumes in his talk at New Orleans. This PULP & PAPER picture shows what is probably longest flume in the world—a 3,250 ft. long one in Union Bag-Camp woodyard at Savannah, Ga., the world's largest woodyard. Wood is unloaded from cars on either side.

What International Paper Co. Uses

Its preferences in new woodyard and wood preparation equipment in South described at Alkaline Pulping meeting

• What has International Paper Co. learned in its extensive experience in the South as regards the best methods of handling wood and of barking and chipping?

Quite a few things—as you would expect in a company with nine mills in six Southern states, consuming more wood in a single day than most other companies do in weeks.

I.P. pioneered the first water flume conveyor in the South at its giant Georgetown, S.C., mill in 1946 and is "sold" on its advantages.

It favors longer rotary drum barkers. Also, sawtooth steel rings inside the drums to aid in starting bark removal.

Rubber belting has proved itself with I.P. for use between barkers and chippers. Also, a new electronic metal detector between the drums and chippers.

These I.P. predilections in woodyard and wood plant were revealed by a newly promoted top executive in its Southern Kraft Division—R. Chatten Haynes, recently advanced to coordinator of all Southern Kraft pulp mills, with headquarters in Mobile, Ala. He succeeded Ike East, who has moved up to higher responsibilities in New York City I.P. executive offices.

Mr. Haynes, graduate of the University of Arkansas and a native son of that state, spoke from wide experience in the South in a rather rambling but practical talk on wood handling and preparation before the TAPPI Alkaline Pulping Conference in New Orleans in mid-November.

HOW TO CUT COSTS . . . From a management aspect, perhaps the most important point he made was the need for more mechanization and more regular patterns of wood receipts at the mills, in order to keep labor costs down. Competition requires that woodyards be expanded to provide safe working inventories. Costs climb when wood comes in irregularly, unless the management is alert enough to be prepared for the low periods and coordinate use of labor. Wood procurement and manufacturing departments need to cooperate closely to keep down costs. The added cost of increased storage, with a rotation program for its use, is justified, he said.

Underwater storage, as at Bowaters and Crossett, is minimizing this problem to some extent in the South.

WHY FLUMES? . . . Mr. Haynes said there are now at least eight mills in the South using flume conveyors. The initial cost is one-fourth to one-third higher than chain conveyors, but there

are power savings. He cited a 2,500 ft. flume using only 150 hp for circulation, where a 2,500 ft. chain requires 350 to 400 hp. The ideal slope for a flume, he said, is 3 to 3½ in. per 100 ft., and width, 3 ft., with depths ranging from 4 to 7½ ft. Lengths vary from 1,000 to 2,500 ft. and water circulation from 15,000 gpm (100 hp) to 20,000 gpm (150 hp).

Floating wood in the flumes improves sand removal and bark burning efficiency. I.P. uses a screening system, with a drag system at bottom of a settling pit to remove sand and sludge. Some flumes have steel plate lining and some are entirely concrete—"both perform well," he told a questioner.

To another he replied that "sinkers" were not giving much trouble in I.P.'s flumes, as even submerged wood tends to move along, though it drags, and smooth sides and bottoms help.

The longer the elapsed time after cutting, the easier it is to bark pine. But late spring and summer wood is difficult to bark. As for chipping, I.P. discovered a "phenomenon," as Mr. Haynes described it—hardwoods are harder to chip between February and May. The number of cords cut per set of knives falls 30% to 40% in that period.

HOW TO IMPROVE BARKING . . . For quality barking, I.P. still depends on rotary drums though it is working on development of new types of barkers. Speed of barking drums are slowed up during the easier barking season, and speeds range from 4.5 to 6 rpm, though some speeds are as high as 7.5 to 8 rpm. More speed, however, means slightly more brooming.

Lengthened drums have given 50% improvement in barking, said Mr. Haynes. He said many drums have been lengthened from 45 to 67½ ft. (150 hp to 225 hp). Increases in capacity also give increases in losses. A 14 ft. diameter drum has about 25% more capacity than a 12 ft. drum, but the cost is considerably more, too.

As to use of sawtooth steel rings inside drums to help initiate barking, he said these are preferably located 4 to 5 in. apart. I.P. tried them at 2 to 4 ft. apart at first. They give the wood a little better lift and improve the tumbling operation, he said.

It is important to have even feeding in drums. Heavy loading means poor barking, but gates can be used to hold wood in when needed. As to the lining in drums, Mr. Haynes expressed a preference for the M-bar type.

For absolute cleaning, sorting and return of logs to barkers is required, but he said the amount recirculated should be limited to about 10% to 15%.

A METAL DETECTOR . . . General Electric Co. has developed a magnet to use on wood between barkers and chippers which is being marketed by Stearns. This device, an electronic metal detector, has had good results in one mill and I.P. intends to install it in other plants. It has saved chippers from disastrous damage.

Using rubber belts after the barkers for wood conveying, said Mr. Haynes, has decreased maintenance costs materially in that operation. Replying to a questioner, he said I.P. has had no experience with belts ahead of the barker.

What should an orange peel bucket and crane handle in one hour? About 40 to 45 cords, replied Mr. Haynes.

DESCRIBES WHAT INTERNATIONAL PAPER HAS EXPERIENCED IN WOODYARD AND WOOD PLANT IMPROVEMENT . . . R. CHATTEN HAYNES, who is newly promoted Coordinator of all Southern Kraft Pulp Manufacturing for I.P., told New Orleans audiences that yards must be expanded for safe working inventories, but alert management is needed to prevent wasted labor in low periods for receipts.

Revolutionary New Process Reported Near Success

Two speakers at the TAPPI Alkaline Pulping Conference in New Orleans spoke enthusiastically about a revolutionary research program now being carried out at Battelle Institute, Cleveland, O., with the financial support of at least 16 pulp and paper companies.

Battelle apparently has struck upon what may be a successful means of separating bark from wood after it has been chipped, by a new flotation process. A blowing process to separate light bark from heavier wood also was tried. A successful flotation process developed at the University of Washington for separation of alder bark from chips was described in an exclusive article in PULP & PAPER, March, 1956 issue, page 125.

What this means is that thousands of "pecker" sawmills in Southern woodlands and many sawmills or woods operations in other regions of the Continent would need only chippers—they would not be required to bark the wood before it is chipped. The bark would then be separated from the wood chips at separation plants at the individual pulp mills.

K. O. Elderkin, president of TAPPI and head of Bowaters Southern, mentioned the great importance of this research at the New Orleans meeting, especially for middle sized and "pecker" sawmills. Don Tufts, supt. of wood utilization, Crossett Paper Mills, also mentioned it.

See PULPWOOD SECTION of this issue for other important new developments in forest genetics, barking, chipping and wood problems discussed at the New Orleans meeting.

Forester Asks What Pulp Men Want

At PAPER WEEK, a Start Will be Made

• What's all this business about forest genetics? What can the foresters accomplish that will help the manufacturers of pulp and paper?

K. O. Elderkin, president of TAPPI and also the vice president and general manager of Bowaters Southern Paper Corp., declares that something is going to be done about this when the industry gathers in New York City for Paper Week in the week of Feb. 17.

"We are going to make a start in February on finding out what this industry wants in fibers—so it can tell the genetics men—and we can start moving ahead."

Mr. Elderkin was, in effect, replying to a major question raised by one of those "genetics men"—Bruce Zobel of the Texas Forest Service. Dr. Zobel asked: "What do the pulping technologists want? Do they want longer fibers? Do they want greater specific gravity? When you pulp and paper people say you want more volume, that's just skirting around the question."

The time has come for the pulping technologists to tell the foresters what they really want.

The question and Mr. Elderkin's clearcut reply were both made at the 10th annual Alkaline Pulping Conference in New Orleans.

Dr. Zobel, a graduate of the University of California forestry school and now based at College Station, Tex., has recently carried out some tests in Texas. He made several seed collection trips into Mexico, is trying to get some of the same characteristics in Southern pine as he found in "wonderful white pine virgin timber" below the Rio Grande. He found white fir in Mexico, exactly like he had known in California.

NEW STUDIES IN NORTH CAROLINA . . . Last month, Dr. Zobel was off to North Carolina, where he is starting a study of cellulose-lignin ratios in forests there. "Nobody knows whether we can get more cellulose from one tree to another," he said.

Don't just think of volume, he told his New Orleans audience. He said: "We can do a lot about diameter growth altering the spacing of rings.

"In just a couple of years in Texas, we have succeeded in better selection —getting long, clear trees, with smaller limbs and smaller knots.

"We can't do much about height, but we can afford to lose a little in diameter if we can add a log at the top of the tree."

Dr. Zobel has been working in Texas for five years. He made "resistance tests" out on the desert near San Antonio, found trees grew well with only 15 inches of rainfall. He produced good trees in the "Lost Pines" region in the dryer areas of Texas.

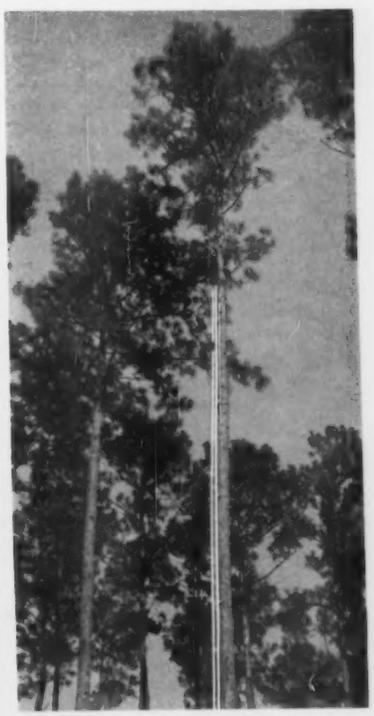
WOOD DENSITY TESTS . . . He found that wood density of loblolly apparently is not affected, whether the tree grows in the wet region or dry region of Texas or whether it is fast or slow growing. Neither could he get any correlation between age and specific gravity, except during the early years (first few rings are low in specific gravity). Tests were made on 15 plots in Texas and there was no correlation except on one site. Two trees, same age, from same site, showed a density range from 45 to 68.

The Texas Forest Service has grafted trees both high and low on the same root stock, and there is a suspicion that there is an inheritance influ-

MEXICO HAS TREE CHARACTERISTICS GOOD FOR SOUTHERN U. S. . . . Virgin timber in mountains of Nuevo Leon, Mexico. Many pine and other conifer species are found growing here that might be of value in a forest genetics research program.

TREE STRAIN THAT GROWS WITH LITTLE WATER . . . One of better loblolly trees from "Lost Pines" region of Texas. Seed from it produced very drought-resistant seedlings.

TWIN GRAFTS ON ONE ROOT STOCK . . . Grafting tests for inheritance of wood specific gravity. These twin grafts are made to eliminate environmental differences. Shoot on left is graft from tree with high specific gravity, and that on right from tree with low specific gravity.



MUCH-DESIRED TREE FOR BREEDING . . . This loblolly pine is over 115 ft. tall. The top of the Swedish ladder, alongside it is 95 ft. from the ground. Such trees are chosen for outstanding height, straight bole, well pruned bole, small limbs and other characters.

These pictures were supplied to PULP & PAPER by the Forest Genetics Laboratory, Texas Forest Service, College Station, Tex.

ence in tree quality. This remains to be seen. Grafting has been a successful short cut to speeding up the fruiting of better tree species. Hormones make a better root system.

Dr. Zobel remarked that previous published figures indicating low specific gravity for spring wood and high for summer wood are being questioned. The experience in Texas shows springwood is not as low as had been denoted, and summer wood is not always high.

He showed pictures of his trip in remote mountains in Mexico and of the tree plots and tests in Texas.

South's Hope For Future Needs is Salvage Wood

Don Tufts, a "Connecticut Yankee" who earned his masters in forestry at Yale and is now supt. of wood utilization at Crossett Industries, Crossett, Ark., told the Alkaline Pulping Conference in New Orleans that only chips from sawmill waste will make possible a doubling of pulpwood production in 20 years to meet future needs.

He said it is possible for the South to salvage 8¾ million cords for pulp from leftovers resulting from the 15 million bd. ft. of lumber cut annually in that region alone.

"We won't be able to double our forests in 20 years. Our principal source for added raw material must be salvaged wood waste," he said.

He showed in slides, and described, various ways in which small sawmills are producing chips. He mentioned research now under way at Battelle Institute, Cleveland, O., for a method to separate bark and chips after chipping, so the small sawmills will only need chippers in order to get into the pulpwood supply business. The separation would be done by flotation at the pulp mills.

He said Crossett Paper Mills uses sawmill pine chips for 22% of wood requirements.

He showed pictures of a new flailing system of debarking used in small mills and views of the Nicholson ring barker, Soderhamn chain barker, Soderhamn Cambio barker, Sumner chipper and other equipment in use.

MEASURING SOLID VOLUME . . . Photographic methods of measuring solid pulpwood volume were discussed at the same session by J. C. McKee, a graduate forester with Union Bag-Camp Paper Corp., Savannah. He told how a photo technique for estimating solid wood per cord was first developed at Howard Smith Paper Mills in Cornwall, Ont.

At Savannah, measurements were made with sample photographic studies of wood receipts on five major rail lines serving the mill. Enlargements were made of a known scale of random areas. Fifteen bolts per picture were found sufficiently precise for an average.

Solid volume measurement was developed as an outgrowth of determining the average diameters. Thus, the cu. ft. of solid wood volume in a rick on a r.r. car could be determined. The normal solid volume of 5 in wood was 52%. This percentage rises as larger wood is measured.

Dr. K. G. Chesley, Crossett research director, chairmanned the session on pulpwood production and problems.

HE BELIEVES IN SUPER-TREES . . . BRUCE ZOBEL (left), of Texas Forest Service, who described the way genetics are producing better pulpwood and lumber trees, discusses methods with KENNETH CHESLEY, Research Director for Crossett Industries.

FUTURE OF SOUTHERN INDUSTRY DEPENDS ON THIS MAN—THE ONE ON RIGHT, WE MEAN . . . In a very colorful address, in which he used many "props" to emphasize his points, FRANK HEYWARD demonstrated to Alkaline Pulping Conference that the paper industry has more at stake in the Small Land Owner's timber (the big man at right) than the owner himself has! Mr. Heyward, Gaylord Container Corp.'s Public Relations Director, is former U.S. forester, state forester and pulpwood specialist for War Production Board in World War II.

He's the South's Problem Man

• That cardboard small woodlot owner which you see standing alongside Frank Heyward in accompanying PULP & PAPER picture, epitomizes for a lot of leaders of the Southern pulp and paper industry what they avow is their biggest problem today.

By far the largest potential future growth of timber in the South is—and must be—on the 128 million acres which he, and other "little men" like him, own.

Mr. Heyward, who holds the title of public relations director of Gaylord Container division of Crown Zellerbach—a title that you will appreciate has a very special meaning in the South when you read this article—used pictures and charts to dramatically bring home the South's No. 1 Problem to the Alkaline Pulping Conference in New Orleans.

For a p.r. man, Mr. Heyward's background may seem odd to an uninitiated Northerner. He has been a U.S. forester, a state forester, a pulpwood specialist for the War Production Board, and a successful tree farmer in his own right.

"More than half of our wood comes from that little man," he said. "We are dependent on that wood. He isn't. We must have it. He doesn't have to have it. Not more than 10% of our small farmers rely on wood for a living."

The Southern industry has even a bigger stake in "the little man" in the future. There are 1,476,000 of them in the South. They own most of the Southern forests—128 million acres. Their average holding is 70 acres. On 66% of these acres, there is no thought being given to perpetuating the timber, said Mr. Heyward. Over 70% of future long fiber potential growth is on these lands and the industry in the future will have to get 75% of its wood from these small owners.

$100 AN ACRE . . . Mr. Heyward said in the South $100 an acre is fast becoming a "common price" now for

timberland. "But we can't keep abreast of the increased demand," he said.

He estimated that to meet predicted future demands of the industry in 1975, the South needs to produce a new surplus of growth over drain of 3½ million cords each and every year.

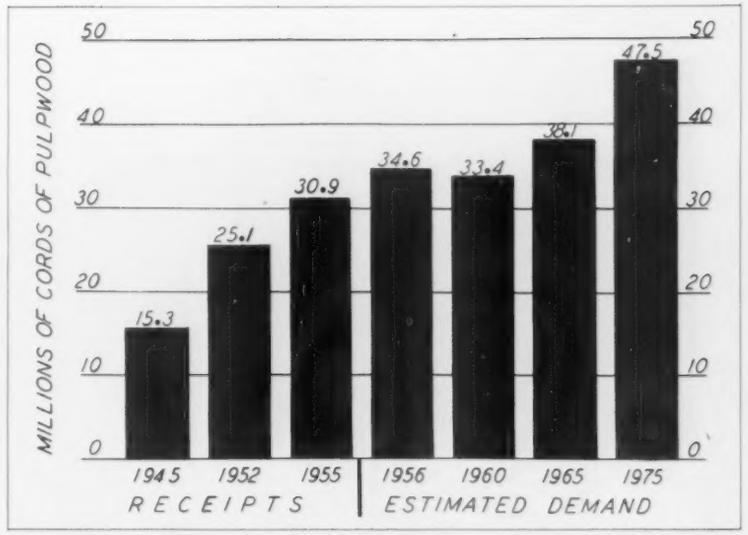
"We can't do this by waving a wand," he said.

The now famous "upper level" forecasts of requirements in 1975 and 2,000 A.D. by the U.S. Forest Service in its Timber Resource Review, published over a year ago, are already "too low," said Mr. Heyward. Many in this industry felt the upper level forecasts were too high when first announced. Mr. Heyward has made his own estimates, checked with USFS economists, and he says 90 million cords a year will be needed by 2,000 A.D.

He also said the Stanford Research Institute predictions of pulpwood requirements in the South "already is running two million cords under current figures in the South."

The South has a growing stock today of 636 million cords of pine but will need 717 million cords in 1975 to meet predicted needs of 53 million cords for pulp.

While for all the U.S.A. and the South, the USFS reports growth exceeds drain, Mr. Heyward said this can be misleading. If you look at specific important areas, the situation varies. In northern Alabama, where pulpwood demands are increasing, drain is 26% over growth, he said.



FOUR YEARS AHEAD! APA estimate of pulpwood we actually used in 1956 is ahead of Stanford Institute's estimate for 1960.

First three bars show pulpwood receipts from 1940 to 1955. Middle bar is APA estimate of actual consumption in 1956 and last three bars are Stanford estimates from 1960 to 1975.

HOW FAST CAN PINE BE GROWN . . . Gaylord has made first thinnings of pine grown 18 years ago. Planted pines average about one-half an inch per year in diameter. Two samples from Mr. Heyward's own tree farm show 6½ in. growth in 14 years and 4½ in. growth in 13 years.

It is all well and good to say the South has 193 million acres of forest land. But when you deduct the hardwood forests, then the mixed oak and pine lands, then low quality and poor stocked pine lands, you wind up with only 42 million acres of well stocked pine lands. That's not so much to crow about, Mr. Heyward said.

POPULATION AND LABOR SUPPLY TRENDS

(in millions)

Year	*U. S. Population*	*Total* Civilian Labor Force*	*Farm† Labor*
1945	140	53.8	8.58
1952	157	63.0	6.81
1965	187	75.1	5.70 (Est.)
1975	212	88.2	4.90 (Est.)

*Stanford Research Institute Report—"America's Demand for Wood"
†Bureau of the Census

Future Wood Labor Crisis?

To Meet It—Mechanization, Higher Pay, Stable Work

● Above figures were pointed to by William S. Bromley, executive secretary, American Pulpwood Association, to show how—in the face of a rising civilian labor force in the United States—the pulpwood producing force is likely to do just the opposite.

This may be one of the most crucial problems lying ahead for pulpwood-using mills, he told National Paperboard Association members at their New York meeting in mid-November. The labor shortage may face mills much sooner than any possible wood shortage, he warned.

To meet this crisis he said mills must provide more stable work and higher wages for woods workers, providing better safety conditions and improved training. Finally, he said:

"It will be necessary to intensify mechanization of all stages of production and delivery of pulpwood."

He showed the inefficiencies and weakness of present systems for pulpwood production. These "handicaps and obstacles" are unique in the industry today, said Mr. Bromley:

Its labor force is 90% in employ of independent contractors or producers; more than two-thirds of its wood comes from farms and small woodlots, operations are scattered and small (of, say, 1,000 producers for one mill, many may produce as little as half a truckload a year); logging is 15 times as hazardous as work in mills, and logging can only be done in reasonably fair weather.

Improved management policies, employment of expert personnel and better purchasing relationships are necessary, he said. He urged NPA members to become active in APA and use its many services. APA now represents 86% of pulpwood producing capacity in the U.S.A.

APA estimated pulpwood demand in 1956 was 34,600,000 cords in the U.S.A. "We are already 4 years ahead of the Stanford Research Institute's forecast, as this figure exceeded its estimate for 1960," he said. He pointed out that pulpwood receipts have increased close to 100% from 1945 to 1955 and may increase another 100% by 1975.

NORTH WESTERN TESTS EQUIPMENT IN ALBERTA WOODS. This Pettibone Cary-Lift loader has proved successful in use in new camps of North Western Pulp & Power, Hinton, Alta. Loader picks up wood and transports it. In deep snow, chains on wheels assist loader to drive down cutter's strip to pick up wood.

A PULP & PAPER SPECIAL:

A Gigantic Wood Enterprise

First story of new equipment and new practices for supplying Hinton, Alberta, Mill, soon to be started up by St. Regis

By ROBIN A. HUTH

Personnel Supervisor, formerly Timber Cruiser, North Western Pulp & Power Ltd.
(written especially for PULP & PAPER)

● North Western Pulp & Power Ltd. of Hinton, Alberta, Canada, has the distinction of being the first pulp mill, and so far the only pulp mill, west of Manitoba and east of the Canadian Rockies. Owned jointly by St. Regis Paper Co. and North Canadian Oils Ltd., North Western is starting up very soon. St. Regis is to manage its operation, and control and sell its output of 150,000 tons of bleached kraft.

The Woodlands Division, skippered by Gordon McNab, formerly of Marathon, is striving to meet the company's deadline of 125,000 cords by the mill's opening date. To do this, Mr. McNab is drawing from three sources: Company supervised independent contractors, purchased wood from farmers and settlers, and local sawmill and tie-cutting operations.

So new that the buildings haven't been painted yet, the company's ten 100-man camps are fully modern and linked by company-built all weather roads. The camps are company-owned and the camp personnel are company-hired, but the actual cost of operations is the responsibility of the contractor. Guy Dempsey, another Marathon woodsman, heads the staff of logging superintendents who control and supervise all the camps.

WOODLOT OWNERS SEE OPPORTUNITY . . . Recognizing a ready means of fattening their wallets, more and more private woodlot owners, farmers and settlers are bringing pulpwood to the mill where it is bought at a price comparable to the cost of company produced wood.

Wood Purchasing Supervisor J. Janssen's many years as chief timber inspector for the Alberta Forest Service have equipped him not only with the general knowledge of wood necessary to his work, but also with the personal acquaintance of many local woodlot owners. The company's pol-

icy of purchasing wood is beginning to stimulate more interest in private woodlots, and any small owner is welcome to free advice from the company's experts upon request.

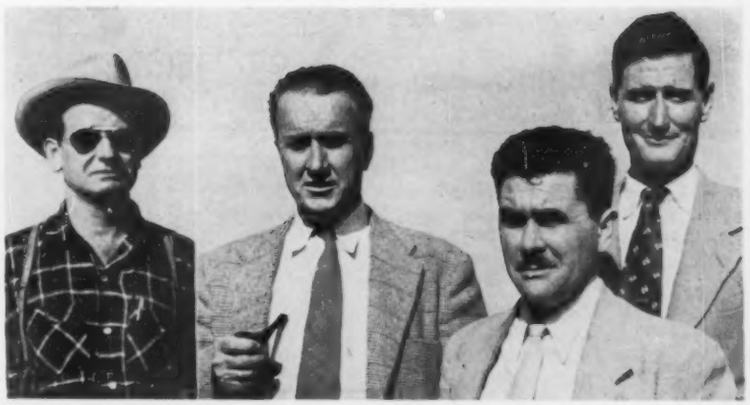
For 50 years before the birth of North Western, small sawmill and tie-cutting operators have been nibbling at what are now the company's 6,000 square miles of lease and reserve timber. Many of their smaller logs and tops which formerly were wasted are now sold to the company. These small operators are also free to ask for technical advice at any time.

CABLE YARDERS ARE SUCCESS . . . North Western is starting operations in an area where logging has meant mostly the sporadic cutting by small operators of a few hundred thousand board feet of timber at a time, and this almost completely by hand. So it is felt by Mr. McNab and his second-in-command, Stanton Hart, that in this almost virgin area, there is plenty of scope for experimentation in mechanical logging. Of great interest at the present time is the high-lead Timberland crawler-mounted cable yarder which is being tried out under the direct supervision of Superintendent Ken Williams, a graduate forest engineer of the University of British Columbia. Williams' success is evidenced by the company's decision to buy another three cable yarders—one Timberland sled-mounted, and two Skagit sled-mounted.

Almost all the pulpwood hauling will be done by trucks, and the pre-hauling and loading equipment is also being given a trial before being entirely accepted. A Pettibone-Mulliken swivel-clam Cary-Lift has been tried in a few of the camps with great success. A four-wheel drive and four-wheel steer Timberland rubber-tired skidding tractor is a later innovation with the company, and has not yet had a chance to prove its worth. Close to delivery is a Nesco Slashmobile put out by Northern Engineering.

Specialized logging equipment is provided the company's contractors under a leasing agreement, and is maintained by North Western's mechanical equipment supervisor, Newton Hamilton, who came from St. Regis woods operations at Godbout, P.Q.

ONLY GROWTH IS CUT . . . North Western is, of course, operating on a sustained-yield basis. With 300,000



BUSY AS NORTH WESTERN MILL NEARS START UP (left to right): GORDON McNAB, Resident Woodlands Mgr. at Hinton, Alta.; DESMOND I. CROSSLEY, Chief Forester for new mill; JIM CLARK, Forester in charge of Production Layout; and ROBIN A. HUTH, Personnel Supervisor, who wrote this special report for PULP & PAPER on pulpwood production progress for this new mill. It is a subject familiar to Mr. Huth, as he first went to work at Hinton, Alta., as Timber Cruiser.

Soon to Start Up . . Some Facts About Hinton

Robin Huth, who started work for the new mill at Hinton as a timber cruiser, but who is now personnel supervisor, has written this special article for PULP & PAPER on the pulpwood aspects, which he was very close to for many months.

North Western Pulp & Paper Co., Hinton, Alta., will produce 150,000 tons a year of bleached kraft market pulp with two 200-ton capacity vertical Kamyr continuous digesters and bleached with chlorine dioxide stages.

On a 6,000 sq. mi. area of rolling forests at altitudes of 3,000 to 4,500 ft., only growth will be cut. Strip cutting will facilitate natural reseeding.

St. Regis, as operators of North Western, jointly owned with Canadian Oils, has access to 3,840,000 acres. Present lease-hold is on 2,000,000 acres. In 14 years the company must decide whether to exercise its option on the rest, enough to permit doubling the mill size.

Under the terms, prices are fixed for 21 years—55 cents a cord for lodgepole (about 50% of the wood supply); $1.50 a cord for spruce (about 25%), and average stumpage price will be about 85 cents.

GETTING READY FOR OPENING. Preparatory to start-up of mill logs are stock-piled in yard. Cary-Lift is at work here.

HINTON'S FIRST BUSH CAMP COMPLETED, but not yet painted. This will house loggers for North Western's new mill.

cords of wood being drained annually from a forest, a perpetual crop is impossible without good, sound, scientific forest management, and within North Western's limits it is up to Des Crossley, chief forester, to provide that control. Mr. Crossley's many years of experience as a forester in Alberta—he was senior research officer in Alberta for the Forestry Branch, Department of Northern Affairs and National Resources, before joining North Western—have imbued him with all the qualities needed to encourage little trees to grow where big ones stood before.

Mr. Crossley's department is divided into three distinct divisions. In their natural order of function, Philip Gimbarzevsky's section—photogrammetry and drafting—comes first. Mr. Gimbarzevsky, a graduate from the Zagreb University in Yugoslavia, was a photogrammetrist with the Alberta Forest Service before joining North Western. Next in working order is production layout under direction of Jim Clark, who, after obtaining his b.sc. in Forestry from the University of British Columbia, joined the Alberta Forest Service, went from there to the British Columbia Forest Service and then on to North Western. A forester, recently from Jacksonville, Fla., is John Miller who heads the continuous forest inventory. Miller brought with him the idea of using IBM cards to catalogue field information. The original questions directed towards the initial cost of IBM faded in the light of the systems' time and money-saving qualities.

BEGINNING OF STOCK PILE. Manitowoc Engineering Co. crane is at work in Hinton mill yard, placing logs on stock pile.

EXPERIMENTS IN SILVICULTURE . . . Mr. Crossley has placed the silvicultural developments directly under his personal supervision. Experiments with clear-cutting in pine, strip and block cutting in spruce, and scarification for regeneration are the start of a perpetual crop that will become harvestable in 80 years.

Scarification is still recent enough to be a new approach in most areas in Canada. North Western is making a careful study of scarifications in dry sites. Using the Fleco rock-rake and Fleco stumper, the Forestry Department is windrowing the slash and ploughing up the ground in an effort to start the regeneration ahead of the grass. The answer to their research will come with the years.

North Western's Woodlands Division is past the embryo stage, and is rapidly becoming a giant with a gigantic task—that of keeping full the ever-demanding maw of one of the largest pulp mills in Canada.

TESTING EQUIPMENT IN WOODS. Much interest by North Western has been expressed in high lead Timberland crawler-mounted cable yarder for use in Alberta woodlands. Left, operators prepare for day's work with this equipment; middle, view of cable yarder at work (boom is 50 ft. long). Right, view of I-H Drott loader at work in North Western woodyard.

Pulpwood Personals

New Assistant Sales Managers

G. A. TAMBLYN, Sales Mgr. of Frank G. Hough Co., Libertyville, Ill., announces appointment of ROBERT L. KNOX (left), and HERMAN R. BROWN (right), as Asst. Sales Mgrs. for the company's "Payloader" equipment. Mr. Knox will take charge of distributor sales and the contacts with field personnel. Mr. Brown will assume direction of manufacturers sales including export, government and supplemental equipment as well as scheduling operations.

New Product—Forest Humus

At Dinuba, Calif., Ivory Lumber Co. is marketing a "forest humus" made from its white pine bark. It is reported that at first they speeded along the decomposition by using bacteria, but now that isn't necessary. The product is a black dust and orchids thrive in it.

TV Screen Is Used In Unusual Way

Television is used at Powell River Co.'s mill in British Columbia to eliminate jamming of 64 in. wood blocks being flumed to the company's new woodroom now under construction, and relieve discomfort on the part of operators.

The camera is at a point where it can record operation of spike rolls where the groundwood blocks are being conveyed from wood mill to groundwood mill—a distance of 2000 ft.

At the lower end of the flume, spike rolls convey the wood up an incline to a point above the level of the flume and over the end, discharging into a conveyer which leads into the grinder room, where the television receiver is located.

In event of a jam of wood blocks or any other difficulty at the discharge end, the flume tender, located about 200 ft. away, will be warned by what he sees on the receiver. He can proceed to remedy the trouble. Previously, it was necessary for him to be outside the building, often in bad weather. Now he is available for other duties inside the mill, as well.

B. A. RYAN div. forester at IP's Springhill, La., mill, has been named president of Louisiana Forestry Assn. . . . **HENRY W. REHLING** has been promoted to dist. forester at Henderson, Tex., by Texas Forest Service . . . **PHILIP WAKELEY**, of Southern Forest Experiment Station, is due congratulations after receiving a special award for outstanding achievement in biological research and for contributing to the advancement of forestry . . . **FORREST PATTON**, former Virginia Polytechnic Institute forester, has joined Chesapeake Corp. of Virginia at Warsaw, Va. . . . **R. M. TOWNSEND** of Jasper, Tex., has been named president of Texas Forestry Assn. . . .

BRUNO E. SEPPALA has succeeded **C. R. BINGER**, recently appointed asst. general manager of the National Pole and Treating Div., as forest management officer of Minnesota and Ontario Paper Co. Heading the forest management dept. of the Canadian operation at Fort Frances, Ont., he will administer programs designed to insure perpetual growth and proper utilization of pulpwood and timber forest lands under the company's jurisdiction. . . .

WALTER J. DAMTOFT, assistant-secretary of Champion Paper and Fibre Co. and director of its general woods dept., has been named as the man who has done the most for forestry in North Carolina during the past year. He was presented with a framed certificate by the state's Gov. Luther Hodges. . . .

RALPH W. LAW has been appointed assistant manager of pulpwood procurement and **FLETCHER W. ASHCRAFT** as assistant to the president of the Arkansas and Louisiana-Missouri Railroad, announced **M. H. COLLET**, transportation and procurement manager of Forest Products Div., Olin Mathieson Chemical Corp., West Monroe, La. **L. C. MAY**, logging supt., has been named acting head forester at Huttig, Ark., and will report to forestry manager, **TRAVIS MacCLENDON**. In two other appointments, **P. P. LYNCH** was named dist. pulpwood procurement mgr. for Mississippi, with temporary headquarters at the Walthall Hotel, Jackson, Miss., and **I. H. BUTLER** was appointed dist. pulpwood procurement manager for southern Arkansas and North-Central Louisiana with headquarters at West Monroe. . . .

BRUCE G. BUELL, Green Bay, chief forester of Marathon Corp., has been named chairman of Wisconsin Forest Industries, sponsor of the state tree farm program. He succeeds **W. J. BROWN** of Kimberly-Clark, Neenah.

C. D. SCHULTZ, president of the firm of engineers, foresters and consultants bearing his name with headquarters in Vancouver and Seattle, announces four major changes: **D. R. BAKEWELL**, an engineering graduate of the U. of British Columbia, has been named general manager; **C. R. MATHESON**, also a UBC grad in engineering, is now development manager; **P. J. HALL**, forestry grad from UBC, is operations manager, and **A. I. W. MACKENZIE** has been named business manager. He's also a forestry grad of UBC.

College Flees Hungary

The entire staff and student body of the 200-year-old Hungarian Forestry School of Sopron, 29 teachers, 289 students and 24 dependents of teachers, has fled from Hungary and will be reestablished as an adjunct of the University of British Columbia.

U. of B.C. offered school facilities. Powell River Co. is helping out by offering vacation jobs and other aid.

Introduces New Barker Line

First in a series of new ring log barkers to be manufactured by Monarch Forge & Machine Works, Inc., was introduced in a demonstration by E. A. Ellis, president of the firm, prior to shipment to a lumber mill.

The 23-ton unit operates mechanically with friction block and friction ring, reducing compressed air requirements. The 36-inch barker feeds up to 125 fpm with a ring drive speed that is variable from 40 rpm to 120 rpm. The ring is driven by a 75 hp motor through electro-magnetic coupling. The speed of infeed and outfeed is controlled by the operator working from a desk type console.

Diversification Step Puts Draper Corp. in Saw Field

Titan Chain Saws of Seattle has been purchased by Draper Corp., Hopedale, Mass., the largest manufacturer of completely automatic textile machinery.

Titan saws were first manufactured back in 1937, the first domestic gasoline-powered chain saw on the U. S. market. In the following years, dozens of other American firms began making chain saws. New manager of Titan is Arthur Young.

PREFERRED

for SEMI-CHEMICAL

SPROUT-WALDRON *Single* with Peripheral

60% of the semi-chemical pulp produced in the United States is refined in Sprout-Waldron *Single Rotating Disc* Refiners. This 3 to 2 lead over *all* other refiners combined demonstrates better than words that Sprout-Waldron Refiners are preferred by those who produce semi-chemical pulp.

Every day, S-W refiners produce more than 3300 tons of bleached and unbleached semi-chemical pulp for paper and paperboard. And refiners now on order will increase this figure by over 600 tons.

Recent Sprout-Waldron installations include the first neutral sulphite semi-chemical pulp mill in New England (*and the second, too*), the first in England, the first in Sweden, and the first west of the Mississippi. These, and dozens of other mills throughout the world, depend on the efficiency and economy of Sprout-Waldron pulping refiners, the heart of the semi-chemical pulping system.

S W

PULPING

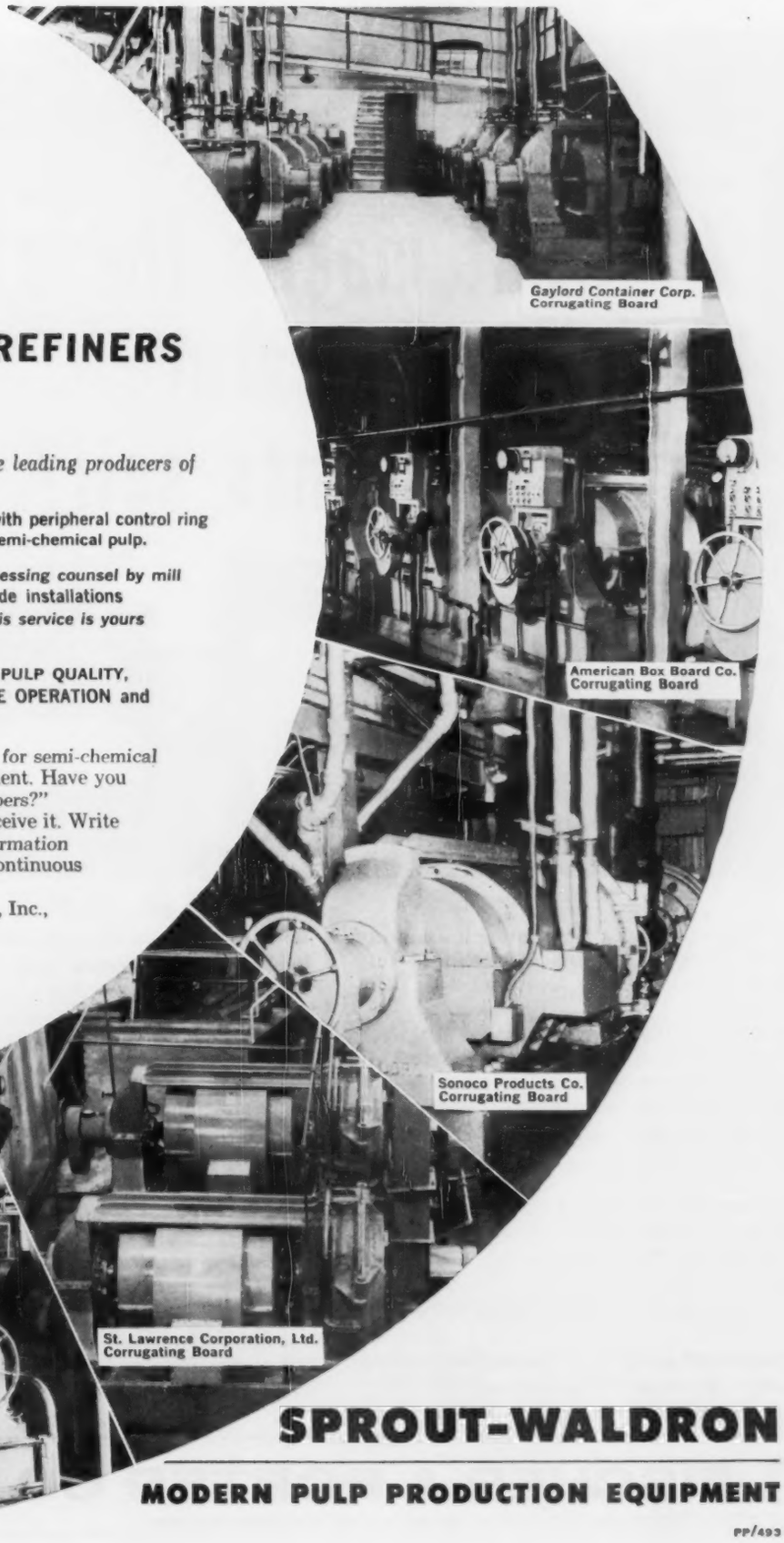
Rotating Disc REFINERS

Control Ring

Sprout-Waldron Refiners are the leading producers of semi-chemical pulp because . . .

- **Single rotating disc design with peripheral control ring is the best for all grades of semi-chemical pulp.**
- ***Expert engineering and processing counsel by mill*** **experienced engineers provide installations** ***of the highest efficiency. This service is yours*** **without obligation.**
- **You are assured of PRIME PULP QUALITY, HIGH CAPACITY, VERSATILE OPERATION and LOW MAINTENANCE.**

Sprout-Waldron is headquarters for semi-chemical pulping information and equipment. Have you seen our publication "Better Fibers?" We'll be glad to see that you receive it. Write for technical reports and for information on Sprout-Waldron Refiners, Continuous Digesters, and FiberPresses.
Address: Sprout-Waldron & Co., Inc.,
329 Logan St., Muncy, Pa.

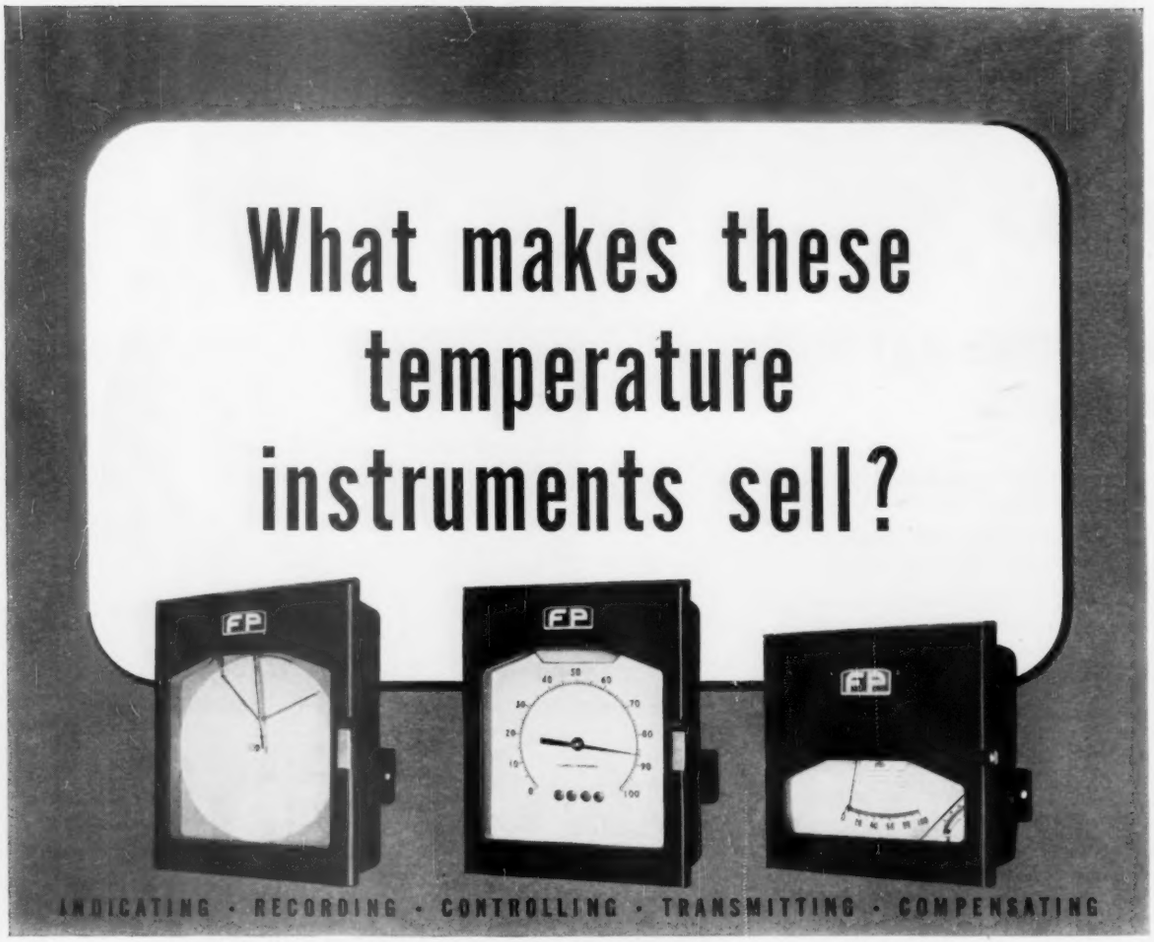


SPROUT-WALDRON

MODERN PULP PRODUCTION EQUIPMENT

PP/493

What makes these temperature instruments sell?



FISCHER & PORTER temperature instruments sell. We can't tell you *all* the reasons why, but we *know* instrument men order them again and again.

It must be their reliability. It must be their accuracy. It must be their quick response.

All of these things and more are built into F&P temperature instruments.

Check the many advantages you get with F&P instruments:

Fast response *because of balanced design. Thin wall bulbs, internal capillary diameters and high filling pressure make it so.*

High Sensitivity

For any application *between minus 400°F and plus 1000°F.*

Linear output *in all liquid and gas filled systems.*

Positive *over-range and under-range protection.*

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Dual control instruments, *with all accessories enclosed within the case.*

Stainless steel parts, *controller adjustments easily accessible, all controller options available.*

Even in the smallest details Fischer & Porter engineering provides you with the best answer to your instrument needs. Write for complete details or specific quotations. Fischer & Porter Co., 2116 County Line Road, Hatboro, Pa.

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Catalog 12-A-10 provides complete engineering specifications on F&P Temperature Instruments. A copy is free for the asking. Write now.

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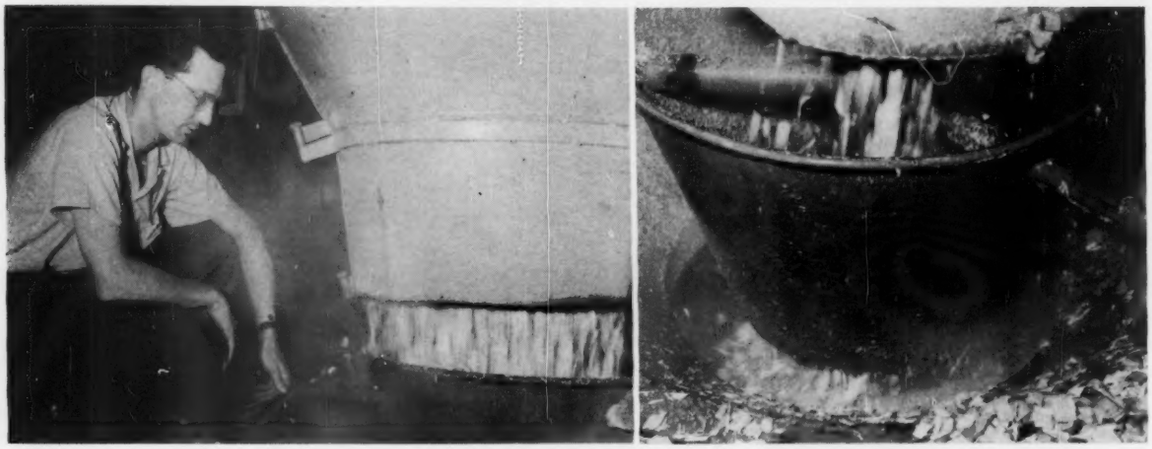


HOW NEW YORK AND PENN SOLVED PROBLEM OF PROPER CHIP PACKING in semi-chemical pilot plant's rotary (18-ft. dia.) digester. Funnel directs chips into cone (on floor). Under cone is pipe coupling drilled so that high pressure steam can be fanned out perpendicular to chip stream. (Left) Semi-Chemical Supervisor JOHN AKELEY, who devised chip packer, move in for close-up of how spreader is working. (Right) PULP & PAPER's camera moves in for a real close look at chip spreader.

How to Pack Chips Efficiently

By JOHN AKELEY

Semi-chemical Supervisor,
New York and Pennsylvania Co.

When we started up the semi-chemical pilot plant at the New York & Pennsylvania Co. mill in Lock Haven, Pa., in July, 1953, we started out filling our digester, an 18-ft. diameter rotary, by rocking it. This wasn't satisfactory, as it left large empty spaces at the journal ends of the digester. To overcome this, we supplemented the rocking procedure by poking the chips with a large pole which had a flat, hoe-like blade at one end. At best, this was cumbersome and time consuming.

One of our other pulp mills had a mechanical packer which they were planning to abandon, so we inherited it. It consisted of a 20 hp motor mounted vertically on a long shaft with short, stubby paddles that hung down inside the digester. The chips were fed down on top of the motor, directed by a funnel so that in passing the spinning paddles they were batted out toward the sides of the vessel. The motor was equipped with overloads that would automatically shut it off when the digester was full. This unit worked quite well but was bulky and had to be moved on wheels and positioned with a crane to fit under our chip hopper.

We were still looking for some method that would be simple, compact and not too time consuming.

After we had used the mechanical packer for a few months the other mill decided they would like to have it back and would trade us an European steam packer that did not prove very successful in their operation.

This unit was designed for a vertical digester and worked on the principle of increasing the velocity of the chips as they fell into the digester.

DIDN'T WORK—BUT . . . Needless to say, it did not work at all in our rotary, but it did give us an idea. Why not use steam to change the direction of the chip stream?

From this we evolved our present design, which consists of a funnel directing the chips onto a cone located in the center of the chip stream. Under the cone is a pipe coupling drilled so that high pressure steam can be fanned out perpendicular to the chip stream.

This steam carries the chips, which have started to change direction after hitting the cone, out along the sides of the digester and fills the digester around the outside, allowing the chips to slide into the center.

Other than a few cracked welds, we have had troublefree service with an increase of from 10% to 25% additional chips over the days when we packed them in by hand, plus a considerable saving in time and effort.

Substantial Savings Are Made by New Arrangement

A new arrangement for shipping sulfur to Wisconsin mills is making big savings. This picture was taken in Chicago. It shows sulfur in barge which arrived there up the Mississippi and Illinois and Chicago Rivers from Port Sulphur, La. Barge brings 1,000 gross tons or more. In Chicago it is being transferred to railroad gondola cars by power shovel, as shown here, ready for last leg of journey to Nekoosa-Edwards Paper Co., Consolidated Water Power & Paper Co., and Rhinelander Paper Co.

STRICTLY PERSONAL

Southern Sidelights

Some notes by Al Wilson, editor, and Bill Diehl, Southern editor, from their Dixie meanderings: President **ART WAKEMAN** of Coosa River Newsprint Co., Coosa Pines, Ala., and his wife and daughter, Franny (latter with a micro-camera) were touring Australia and New Zealand last month. Mr. Wakeman officially represented the Newsprint Service Bureau, of which he is president. The new Tasman mill "Down Under" was having open house with the Duke of Edinburgh attending. The Wakemans were also seeing New Zealand Forest Products, Ltd., Australian Newsprint Mills, Ltd., and, of course, Kimberly-Clark's cellucotton converter at Sidney . . .

J. FINLEY McRAE, Merchants National Bank of Mobile, himself closely affiliated with development of the Southern pulp and paper industry, talked about it at a meeting of the Newcomen Society of North America meeting in that city, with many paper company heads as guests. "Newcomen" is an old English society which follows industrial progress . . . Southern pulp men were in role of hosts when U.S. Pulp Producers Assn. met at Sea Island, Ga., recently. It was first such meeting for a Gulf State newcomer in pulp market—Vice Pres. **WILLIS PENFIELD.** He attended with their pulp rep, **WALTER LAWRENCE . . .**

DR. WILLIAM W. MARTENY, now tech. advisor, planning and development, Gair-Continental Can Co., at Greenville, S.C. (working with **BILL SCHNORBACH,** asst. to **BILL HEUSTIS,** director of planning and development), is one of four industry men from Univ. of Arizona in late '30s—others are **JOHN REDD,** Mead research; **JOHN HECHTMAN,** at Munising, and **WALTER BUBLITZ** of Kimberly-Clark . . .

H. Y. CHARBONNIER, mill mgr., Savannah, Union Bag-Camp, toured Mexico by car with his wife after New Orleans meeting. He has a brother in Evanston, Ill., consultant to this industry . . .

Since Kimberly-Clark owns two mills and is operating another in Mexico, it wasn't surprising to meet young **CARLOS FUERTES,** temporarily assigned to the staff at the Coosa River Newsprint Co. He is a graduate of Mexcio's U. of Monterrey, and will go back to the Chihuahua pulp mill which K-C is managing under contract . . .

RICHARD C. DOANE, president of I.P., New York, was in Mobile for the Newcomen Society meeting and introduced the principal speaker .

Vice Pres. **JOHN NOBLE** of Impco recalls on his first of many trips in the South, in early '40's, he covered 30 mills in 30 days. Last trip, with Mrs. Noble, included a visit with their son, in advertising promotion with the famed Marcus-Nieman store in Dallas . . .

So much is happening these days, its still news that **AUBREY T. TAYLOR** has gone to Continental Can, Hopewell, Va., as semi-chemical pulping consultant. Succeeding him as manager at Big Island, Va., is **JAMES W. HALEY,** his asst. there, with National for many years . . .

STEVE HALEY, with Stebbins Engineering & Mfg. Co. 9 years, has moved to 3980 Bayou Blvd., Pensacola, Fla., with Mrs. H. and three daughters as Stebbins Southern rep . . . **JACK GUTHRIE,** formerly with St. Regis' woodlands div. in Jacksonville, is now a member of Chemical Linings Inc., sales staff and has opened headquarters on Ashford Rd. in Atlanta, close to many other sales reps in the South and two blocks from PULP & PAPER'S Southern Editor . . . **PAUL GILMOT,** once with Crossett's research team, has joined the research staff of Olin Mathieson at West Monroe. They are planning a new building for researchers . . . **HERMAN MOORE,** onetime editor of the Natchez Times and a graduate of LSU, has taken over as public relations director and editor of the Ink Pad at International Paper's Natchez mill. Herman takes the place of **GEORGE LUDLUM,** who died tragically two months ago in a hunting accident.

GENE ELLIS, manager at Natchez IP mill, has made a hobby of riverboat lore. His working quarters are decorated with rare photographs of Mississippi's earlier paddlewheelers.

KARL GOTHNER, who now represents Rosenblad Corp. in the South, combined business with pleasure at the recent Alkaline Pulping Conference in gay New Orleans. He began honeymoon there with his new bride . . . **PAT** and **ISABEL YUNKER** had to cut their New Orleans trip short due to a serious accident to son, **ARTHUR.** He is now out of the hospital and recovering, we're happy to report . . . The pulping meet, incidentally, attracted 428 men and 99 ladies, one of the biggest sessions to date.

Mobile friends will miss **IKE** and **WINIFRED EAST,** who has moved to bigger job in IP New York headquarters. They live now in East Darien, neighbors of the **PENNINGERS,** he was IP agent in South, now also based in N.Y.C. . . .

Southern kraft really gets around, as witness the story **WILLIS PENFIELD,** v.p. at Gulf States, tells. Willis' lovely daughter, **MARSHA,** is now in Germany with her husband, **LT. KENNETH LITTLE,** a member of the adjutant general office in Augsburg. She recently sent home a paper bag used to wrap some parcels in the German PX. It was a Tuff Oak EZ Opener made right at home in Tuscaloosa . . .

Natchez Mills Extend Welcome to Legislators

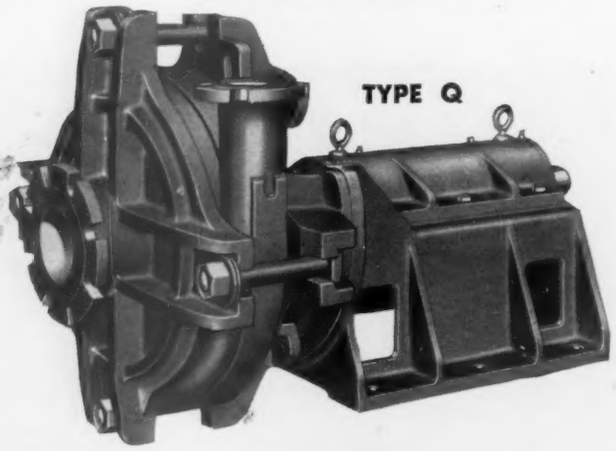
Three men standing are company executives who extended a welcome to about 30 touring state legislators in Mississippi to their two mills in Natchez, Miss. The trio standing—left to right: EUGENE E. ELLIS, JR., *Mississippi-born Mill Manager of* International Paper Co.'s bleached dissolving pulp—market paper pulp mill (over 850 tons a day) at Natchez; W. H. GRAHAM, Plant Mgr. for Johns-Manville's 250-*ton kraft pulp-groundwood-insulation board mill,* and H. S. GALLOWAY, of Mobile, Secretary-Treasurer, International Paper Co. Seated are two legislators, JAMES WALKER and ROBERT ANDERSON.

Coddling old pumps, "bargain" pumps or pumps that weren't engineered for the job can be an expensive proposition.

When misfits like this are put to work, they generally can handle only half the job they should. Often their "downtime" is greater than their operating time. And when pumps fail the greatest cost is not for repairs—but for lost production.

Start today by replacing "misfits" with new Morris pumps. For nearly a century Morris has been manufacturing a complete line of top quality pumps to meet the diversified requirements of industry. Every Morris pump has been specially designed and engineered to handle a specific job and to give you years of trouble-free service under the most rugged conditions.

Specify Morris when you want lasting pump value . . . it will save you money in the long run.



MORRIS
CENTRIFUGAL
PUMPS

● **Free Service.** Morris Engineers will be glad to recommend the pump best suited to your needs for size, capacity, etc. Send necessary data today to Morris Machine Works, Baldwinsville, N. Y.

R. M. GILMORE, Rayonier's safety director, recently was a visitor at the company's Southern mills, meeting with **A. L. FORD** and **ANDY WILSON** from Jesup, **ART MALONE** and **RAY SHRIGLEY** from Fernandina and **R. P. TALBIRD** and **JIM PROCTOR** of the timber div. . . . Board of directors of the Mead Corp. recently held a regular meeting in Atlanta, Ga., for the first time in the company's history. **JAMES D. ROBINSON, JR.,** chairman of the First National Bank of Atlanta, senator-elect **HERMAN TALMADGE** and Atlanta's congenial Mayor **BILL HARTSFIELD** were Peach State hosts . . . **JAMES J. DUNCAN,** formerly with Scott Paper Co. at Chester, Pa., is now asst. personnel mgr. at Brunswick Pulp & Paper . . .

WILLIAM MALLY, sales manager for Container Corp. of America plant at Fernandina and former asst. to Vice Pres. **FRANK SAUER,** was fatally injured in an auto accident between Fernandina and Jacksonville.

Kaolin clay, so important to coating papers, was recently king in Sandersville, Ga., home of Burgess Pigment Co. and Thiele-Kaolin Co., when the town celebrated a five-day clay celebration complete with invitation golf tourney. And in Atlanta the importance of the pulp and paper industry was recently emphasized by the United Press' bureau manager, **BILL TUCKER.** Said Bill: "The average Southerner would probably be surprised to learn how big a change the pulp and paper industry has brought to the South." Trees are now more important to Dixie than cotton . . .

MARK ALLEN is now supt. of paper quality at East Texas Pulp & Paper . . . **TOM AITKIN,** formerly with Abitibi Power & Paper, is now a chem engineer in West Virginia Pulp and Paper's research div. at Covington, Va. . . . **FRED D. FLOYD** is production supt. at I.P.'s Bastrop mill . . . **FRANCIS GETCHELL** is pres. and chief consultant of Florida Palrus, Inc., and the Palm Pulp & Paper Co. at Akeechobee, Fla. . . . **RUSSELL JAGODITSH,** formerly with Chase Bag Co., is group leader of coating for Olin Mathieson's Forest Products Div. at West Monroe . . . **WILLIAM MAGGIO** has been appointed chief chemist of East Texas Pulp & Paper Co. . . . **EARL MURPHY** has been transferred to Jesup, Ga., from New York to take over as asst. resident mgr. in charge of engineering and maintenance . . . **RICHARD F. SORENSON,** formerly of Union Bag-Camp has been appointed staff electrical engineer in charge of operations for St. Regis at Jacksonville . . . **JOSEPH THEILER** of National Container recently was transferred from Tomahawk to Jacksonville . . . **JENNINGS P. WARD** has left East Texas Pulp & Paper to accept the asst. pulp mill supt. position at Palatka, Fla. for Hudson Pulp & Paper . . .

STRICTLY PERSONAL

Northeast Notes

J. D. LELAND, formerly president and **R. A. L. ELLIS,** formerly vice president, Long-Bell Lumber Co., are now vice presidents of International Paper Co. . . . **W. D. HURLBUT** and **J. R. SHERMAN** have been named vice presidents, American Paper Exports (export division of IP). Mr. Hurlbut joined Riordon Sales Corp., Ltd., affiliate of IP, in 1952 at its Montreal office, moved 2 years later to New York. Mr. Sherman joined in 1940 and became corporate secretary in 1949.

JOHN O. WALKER has joined New York and Pennsylvania Co. as manager of employe development. . . . **AARON P. MITCHEL,** former vice president and general sales manager, Riegel Paper Corp. is now senior vice president for sales. . . . **RAY CLARY,** Copsecook Mill superintendent for S. D. Warren Co., at Gardiner, Me., retired recently after 50 years of continuous service. **JOHN DALEY,** assistant supt., succeeds him. Latter is past chairman of Gardiner School Board, past president of Gardiner Rotary Club and superintendent of a church school for 15 years. . . .

ROBERT "BOB" M. VAN SANT has joined the pulp sales dept., Perkins-Goodwin Co., advises **LOUIS CALDER,** president. He will cover New England. . . . **JOSEPH J. SANTRY,** secretary, Elof Hansson, Inc., takes on additional duties as sales manager of domestic woodpulp sales. . . . **TADASHI NAGANO,** chief engineer of the Toyo Pulp Co. of Japan, on a world tour of leading pulp and paper companies recently visited Brown Co.'s new Day-Kesting kraft bleach plant at Berlin, N. H. . . .

GEORGE E. PROKUPEK, assistant supt., Tonawanda Boxboard Mill, Rob-

Promotions by Rayonier

R. HAROLD McBEAN (left) who has been Supt. of Woodfibre mill, Alaska Pine & Cellulose in British Columbia, has been made Res. Mgr., succeeding JOHN GUTHRIE, who has been appointed Res. Mgr., at the company's Port Alice, B.C., mill. R. H. ("BUCK") RICHMOND (right) former Res. Mgr. at Port Alice, has been appointed Asst. Res. Mgr. at Rayonier's pulp mill at Port Angeles, Wash. Rayonier has a controlling interest in Alaska Pine.

Swenson Puts Ideas to Work

for the Processing Industry!

Ideas for better process methods will start to work for you when you read Swenson's new 12-page brochure, "An Open Door". Just off the press it shows how Swenson Engineering assists in solving many evaporation, crystallization, filtration, pulp washing and spray drying problems.

It introduces the facilities and operations of the Swenson Evaporator Company. Many installations of Swenson equipment are illustrated and described. Truly "An Open Door" to lower production costs, it shows how experience combined with extensive research and modern manufacturing provides the equipment best suited to particular needs. Whatever your position . . . engineer, president, manager, chemist . . . be sure to request this brochure. It is interesting and informative. Send for your copy today!

SWENSON EVAPORATOR COMPANY, 15632 Lathrop Avenue, Harvey, Illinois.

Manufacturers of Evaporators, Spray Dryers, Crystallizers, Filters, Pulp Washers, Acid Resistant Heat Exchangers and other Process Equipment.

SWENSON
Proved Engineering for the Process Industries
Since 1889
A Division of WHITING Corporation

STRICTLY PERSONAL

ert Gair division of Continental Can Co., moves up as assistant to **WILLIAM H. CADDOO,** vice president in charge of boxboard operations. **EVERETT RAYMOND** replaces him as assistant super at Tonawanda. **ARTHUR J. BEILEIN** is now superintendent of finishing operations at the Tonawanda mill. **JAMES O. ELMORE** has been named personnel manager to replace him. . . .

JOHN H. MASSHARD is new associate director for design in the staff engineering and development division of Scott Paper Co. announces **PAUL C. BALDWIN,** vice president in charge of research and development. Mr. Masshard will be responsible for all basic design and coordinate and direct staff engineering groups for paper mill, pulp mill, converting, and electrical and utilities. . . . **RICHARD COFFMAN** has been named production coordinator on the staff of the vice president in charge of manufacturing for Scott. He was former production manager for Scott's Fort Edward, N.Y., mill. He joined the company in 1938 as a runner in finishing dept., Chester mill.

Midwest Medley

GEORGE K. FERGUSON, of Watervliet, Mich., has been elected a director of Hammermill Paper Co. Mr. Ferguson, who is president of Hammermill's subsidiary Watervliet Paper Co., Watervliet, Mich., succeeds **DALE A. LINDSAY.** Mr. Lindsay, a Greenwich, Conn., investment counselor, tendered his resignation following 16 years as a director. . . . **COLA G. PARKER,** Menasha, Wis., president of the National Association of Manufacturers, spoke at the 61st Congress of American Industry held in New York City Dec. 5-7, on "New Dimensions for American Industry." . . . **HAL A.**

TAKING TIME OUT TO OBSERVE A SAFETY RECORD of five years without a lost-time accident were boiler room employes of the Neenah Paper Co., division of Kimberly-Clark Corp. Their record represents 250,626 man hours without a lost-time injury. Left to right above are ROBERT WOOD, Kimberly-Clark Staff Safety Supervisor; EARL R. WILLIAMS, Technical Production Manager and Safety Chairman for Neenah Mill; LEO O. SCHUBART, Neenah Paper Co. President; SIDNEY WRIGHT, Power Engineer; RAY BURTS, longest term employe in boiler plant, and ALAN ADRIAN, Operations Manager. (Post-Crescent Photo)

Another Installation By

CHEMICAL LININGS

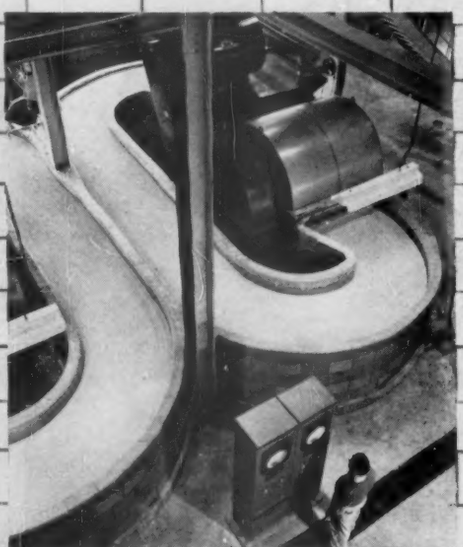


Photo shows a portion of the four Chemtile Tubs installed at the R. & W. Paper Company in Longview, Washington for Jones Beating Units.

And . . . another reason why your lining job is in safe hands with us. Yes . . . hundreds of combined years of Engineering and Installation know-how guarantee you a job unmatched in quality.

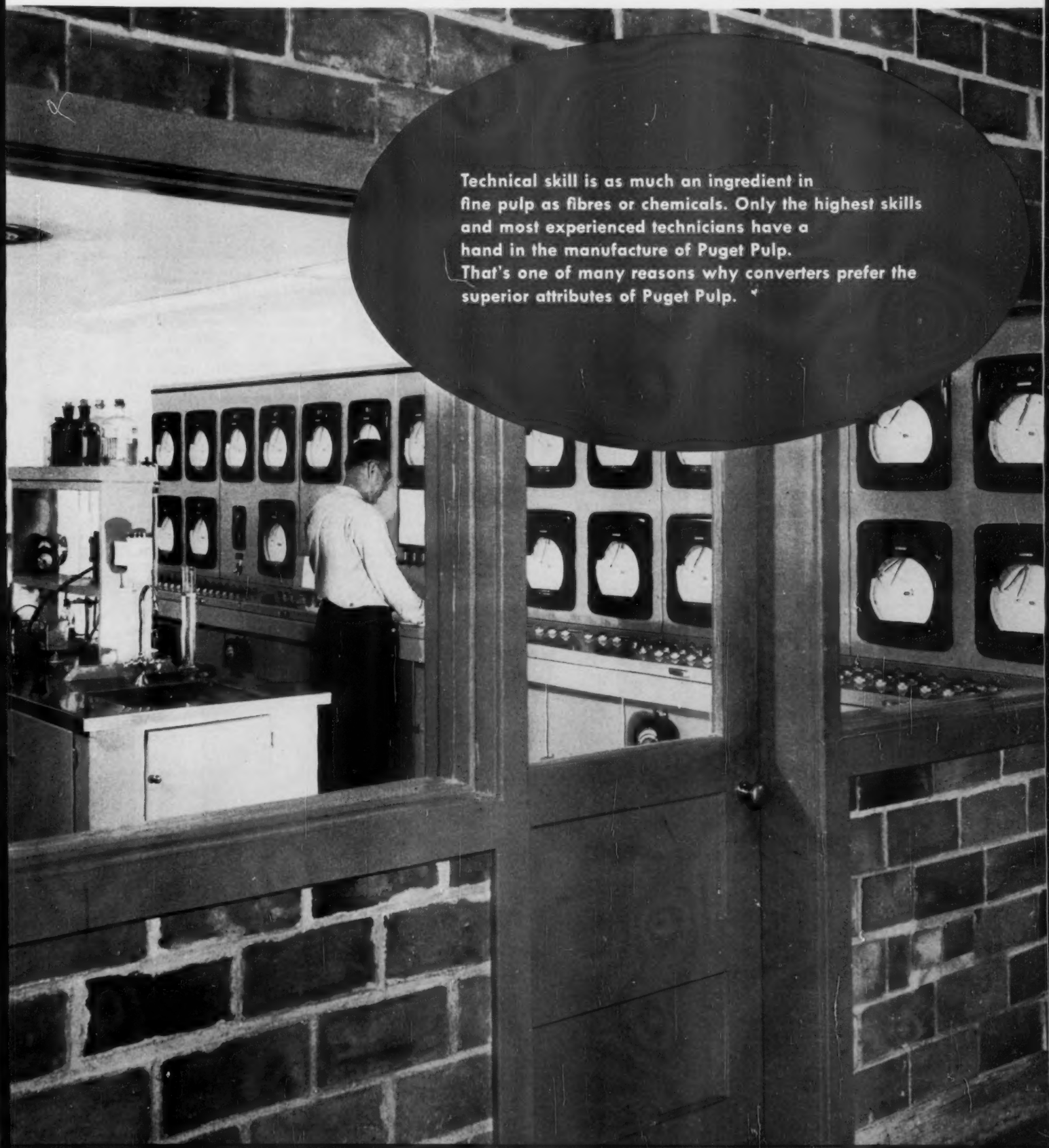
The fastest growing name in Corrosion-Resistant Linings and Tile Tanks

CHEMICAL LININGS, INC.

156 Stone St., Watertown, N. Y.

Seattle, Washington — Jacksonville, Florida

Only the Best goes into Puget Pulp



Technical skill is as much an ingredient in fine pulp as fibres or chemicals. Only the highest skills and most experienced technicians have a hand in the manufacture of Puget Pulp.
That's one of many reasons why converters prefer the superior attributes of Puget Pulp.

PUGET SOUND
PULP AND TIMBER CO.
BELLINGHAM, WASHINGTON

STRICTLY PERSONAL

KROEGER, of New York City, has been selected as a member of the board of directors of River Raisin Paper Co., Monroe, Mich., to fill the unexpired term of **J. FRANK GRAY**, of Monroe, who resigned. . . .

M. F. (MORT) MORTENSEN has left the Kimberly-Clark Neenah mill to be a staff assistant to **JOHN WOLLWAGE** in foreign operations. . . . **PHILIP NOBLES** has been appointed maintenance coordinator and **THEODORE WELTON**, storekeeper, of the Biron Div., Consolidated Water Power & Paper Co. **ESLEY SCHULTZ** has been appointed administrative assistant in the Ahdawagam Div. Sales Dept. of Consolidated at Wisconsin Rapids. . . . **JOHN EBBEN**, electrical engineering foreman in charge of electrical crews at Neenah's K-C mill, is in his 37th year with the company, having started back in 1919 on the supercalenders in the paper mill. He and his wife live in Little Chute and are the parents of six sons: Dick, Paul, Gerald, Ken, Eddie and Tom. . . .

STEVE SOPER has taken over the duties of pipefitter foreman at Escanaba Paper Co., Escanaba, Mich. Also promoted at the mill are **CLIFTON RENO** to electrical foreman and **GLENN STADE** to assistant electrical foreman. . . . **ANTON PANZER** has been named woodroom foreman succeeding the late **FRED REIMER**, and **RAYMOND HONKOMP** has been appointed assistant supt. of yards and cranes at the Biron Div. of Consolidated Water Power & Paper Co. . . . **HERB SUTER**, vice president, sales, Champion Paper and Fibre Co., Hamilton, O., recently observed 45 years of service and was presented with his Champion wrist watch. . . .

EARL WINCHESTER, supercalender dept., Escanaba Paper Co., filled his bow and arrow license when he brought down his first deer while hunting on the Stonington Peninsula. This was Earl's first hunting experience with bow and arrow. . . . **DAVID KLASELL**, son of **ELMER KLASELL**, woodland dept., also of Escanaba, was a successful archer for the second consecutive year, bringing down a 90 lb. spikehorn buck. . . . **PAUL SCHOLZ**, a machinist at the Niagara, Wis., mill of Kimberly-Clark, and his wife took a most interesting vacation this year over the Alcan highway to Alaska. They shared their experiences and impressions with other Kimberly-Clarkers through the medium of **Cooperation**, K-C's interesting house organ. . . . **GEORGE ZITELMAN**, millwright foreman in Neenah's K-C mill, has joined the ranks of the company's Quarter Century Club. . . .

Pacific Patter

H. O. TEEPLE, a member of the development and research div. International Nickel Co., was guest speaker at a recent Wisconsin section meeting of the National Association of Corrosion Engineers. . . .

R. V. HANSBERGER resigned as executive vice president of Western Kraft Corp., Portland, Ore. effective Dec. 31, to become president of Boise Payette Lumber Co., Boise, Ida., which may indicate interest of that company in fiberboard. Mr. Hansberger was affiliated with Container Corp. from 1947 to 1954, resigning as director of the budget to join Western Kraft. . . . **RON RICHARDSON**, formerly CZ's assistant to director of public relations in San Francisco, has transferred to Crown's Portland, Ore., office as Northwestern public relations representative and will be assisted by **GLENN E. GIL-**

(Paid Advertisement)

O. C. COOK R. GOURLAY M. J. LUCAS

Three long-time British Columbia paper sales executives are named in a list of promotions announced by Crown Zellerbach Canada Limited. Orval C. Cook is promoted to general sales manager, pulp and paper, of the Company. Mr. Cook will continue to direct sales for Bartram Paper Products Ltd., a Crown Zellerbach subsidiary. Ronald Gourlay, former general sales manager, is promoted to the newly-created position of director, economic planning. M. J. Lucas is promoted to the new position of manager of marketing services, pulp and paper. He was formerly assistant sales manager. All three are well-known in Western Canada in the paper business. The promotions, which become effective immediately, were announced by Frank A. Scott, vice-president, pulp and paper sales, Crown Zellerbach Canada Limited.

In Coast News

WILLIAM J. LOCKE (left), promoted to Supervisor of Crown Z's Northwest Land & Tax Department, Portland, Ore., succeeding J. R. FRUM who retired Oct. 31. E. G. WILSON (right), with a background of 20 years in the industry, will be Gen. Supt. of B.C. Forest Products $38,000,000 bleached sulfate mill being built at Crofton, Vancouver Island. He was formerly with Continental Can Co.'s Hopewell, Va., mill, KVP Co. at Espanola, Pacific Mills (CZC) at Ocean Falls, B.C. and Sorg Pulp Co., Port Mellon, B.C.

LESPIE, formerly of Portland bureau of Associated Press. . . .

RICHARD E. LAWTON, supervisor of industrial and community relations, CZ Camas, served as program chairman for Pacific Northwest Personnel Conference recently held in Portland . . . **ELMER DAVIS,** who joined Crown Z in 1911, has been advanced from paper machine superintendent at CZ Lebanon, Ore., mill to paper machine specialist, in which position he is responsible for training paper machine personnel . . . **FRANK SMITH,** machine tender, was promoted to paper machine superintendent at CZ Lebanon. . . .

It's a Small World

George Lamb, president of Lamb-Grays Harbor Co., Inc., Hoquiam, Wash., engineers and manufactures of finishing room equipment and systems, was checking into a hotel in Oslo, Norway, recently when he saw a familiar face. It was J. Mel Jopp, Columbia Cellulose Co.'s engineer from its Vancouver, B.C., headquarters.

They had a pleasant reunion and among other things, Mr. Jopp learned for the first time from Mr. Lamb that President Eisenhower had been re-elected.

Back on Job for Sandy Hill

G. Elmer Emigh's retirement as Southern California rep. for Sandy Hill Iron & Brass Works didn't "take." His doctor changed his mind and so Mr. Emigh is back on the job, enthusiastically covering Southern California area, and assisting Richard A. Hatch in calling on paper mills. Mr. Hatch covers the rest of the West Coast territory for general papermaking machinery, while A. H. Lundberg represents the Kamyr pulp line.

STRICTLY PERSONAL

WILLIAM R. "BILL" PERRY, Western States manager for Clark-Aiken Co., manufacturers of paper mill machinery in Lee, Mass., has offices now at 114 E. Union St., Pasadena, Calif. Phone Ryan 1-7813. From this Western Division office, Mr. Perry will serve all states west of the Rockies for Clark Aiken. . . . **GEORGE FREDERICK "FRITZ" JEWETT,** 60, chairman of the board and former president of Potlatch Forests Inc. died Nov. 23 at Spokane, Wash. following an abdominal operation. An industrialist and a philanthropist, Mr. Jewett was born in St. Paul, Minn., the son of James Richard and Margaret Weyerhaeuser Jewett. He graduated from Harvard in 1919. married Mary Pelton Cooper at Ogdensburg, N.Y. in 1925, then moved to Lewiston, Ida. . . . **CECIL KNAPP,** finishing supt. and 40-year man at Crown Z, Camas. has been succeeded as chairman of the Pacific Coast Finishing Supts. Association by **VAL CURTIS,** converting and finishing supt., Simpson Paper Co., Everett, Wash. This group—there were 45 superintendents and engineers in hand—recently held a meeting and toured the new Zellerbach Lulu Island converting plant near Vancouver, B.C. Their next meeting will be at the Simpson mill. . . . **RUSS VOGNILD,** assistant western sales mgr., Hooker Electrochemical Co., Tacoma, Wash., and wife, Eva, took a real all-American vacation, traveling 10,000 miles and covered 30 states. It was fun but they both agree with Poe and his Raven: "Nevermore." . . . **JOHN SHEDD,** chief chemist, Simpson Paper Co., has received his diamond to add to his Old Timer's Club. John joined the company in 1926 and has seen the laboratory grow from an original lone wooden building to the expanded and improved installations, still being erected under his guidance. . . . **LINN BRADLEY,** well known in the industry as a consultant and for his work in multiple bleaching and the sodium base recovery system, died Oct. 31 at Montclair, N. J. . . . **JOHN L. ARAM,** president of Boise Payette Lumber Co., Boise, Idaho, has been named assistant to Weyerhaeuser Timber Co. President J. P. Weyerhaeuser, Jr. Mr. Aram is a

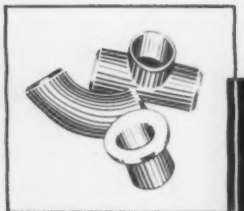
New President of Reliance; Fiber Man heads Lumber Firm

EDWARD E. HELM (left), new President of Reliance Electric & Engineering Co., is a native of Paradise, Pa., graduated from Pennsylvania State Univ. in 1924 in engineering, when he joined Reliance. First assigned in sales engineering in Philadelphia, he became Gen. Sales Mgr. in 1944 and Sales Vice Pres. in 1946, and Vice Pres. and Gen. Mgr. in Jan. 1956.

R. V. HANSBERGER (right), resigned as Exec. Vice Pres., Western Kraft Corp., Albany, Ore., to become President of Boise Payette Lumber Co. in Idaho. Boise Payette thus names for its chief a man with experience largely in the fiber field, which many observers consider significant.

Best Wishes to
R. W. PAPER CO.
LONGVIEW, WASHINGTON

Northwest Copper is proud to have played a part in furnishing stainless steel pipe, fittings, tanks and Special Fabrications in the new and modern plant.



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native of Idaho where he started in the forest products business as a trainee with Potlatch Forest, Inc., at Lewiston. He worked up to shipping supt., manager of the manufacturing division, vice president, manufacturing division, and became executive vice president in 1953, and president in 1955. . . .

Louis Dimmock, Oldest Stebbins Employe, Dies

Louis W. Dimmock, veteran field supt. for Stebbins Engineering & Mfg. Co., died recently in Everett, Wash. He was born in 1879 and joined Stebbins in 1914, becoming one of its best liked and best known field superintendents. He traveled extensively and supervised Stebbins installations throughout North America and also several foreign jobs. His employment was never terminated, although he had been on the retirement list and was employed only for minor inspection work during the past few years.

He is survived by one son, also a Stebbins superintendent.

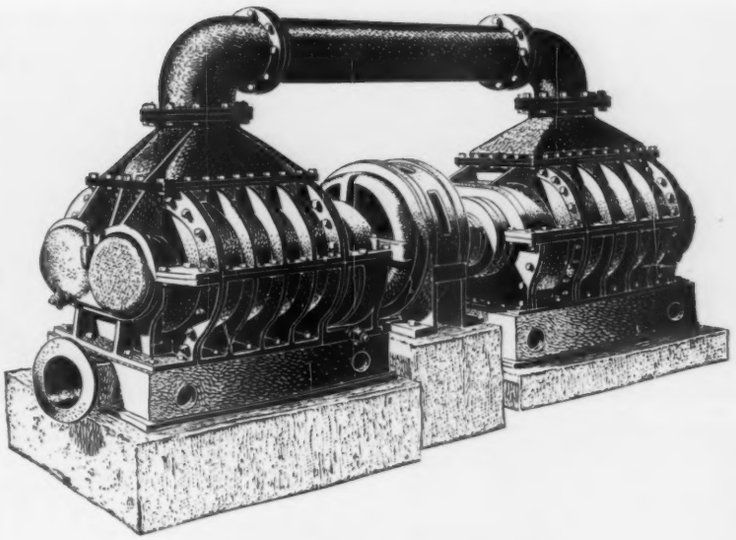
Mr. Dimmock moved to the Pacific Coast with the Stebbins Seattle organization and made his home in Everett.

Charles Ackley Dies

Charles E. Ackley, paper mill supt. at Crown Zellerbach Corp. West Linn, Ore. mill for past eight years and past national president of American Pulp & Paper Mill Superintendents Assn., died suddenly Nov. 25 at Green Bay, Wis.

Having just arrived on a business trip from the West Coast, he mentioned not feeling up to par on arriving at the hotel and passed away later that night, apparently from a heart attack. Survivors include his widow Emma, son Douglas at Oakland, Calif., and two daughters, Mrs. Jack Weiblen, Portland, Ore., and Mrs. Robert Wolfe, Eugene, Ore.

H. L. BOTTEMILLER, Pacific Northwest sales representative of Titanium Pigment Corp., and wife **EDNA** attended Pacific Lutheran College's annual homecoming celebration as the proud parents of **QUEEN CAROL**—their daughter having been accorded the distinction. . . . **Dr. WINTON PATNODE**, director of research for Weyerhaeuser Timber Co., became member of advisory board of Washington State Institute of Technology. . . . **GEORGE W. TORRENCE**, recently of General Time Corp. and before that with Caterpillar Tractor Co., has joined Weyerhaeuser Timber Co. as director of industrial relations. . . . **HARALD HAUFF** became plant engineer at Weyerhaeuser Pulp Div., Springfield plant, replacing **WALLY WATT** who transferred to firm's new Grays Harbor pulp mill as plant engineer.



R-C high speed vacuum pumps cost less to install and operate

Outstanding performance over many years in hundreds of applications in paper and other process industries have built a strong preference for Roots-Connersville vacuum pumps.

- Reduced horsepower at higher speeds (600 rpm and up) saves as much as 25% in power and lowers the cost of motors.
- Minimum sealing water required, from 4 to 40 gpm. Performance is unaffected by water temperature.
- Straight spur gears permit operation without axial thrust, reducing maintenance and holding downtime to a minimum.
- Internal parts readily accessible for inspection without disturbing impeller clearances.
- Compact units require small floor space and less expensive foundations.

R-C vacuum pumps are supplied in single-stage or compound units to meet any capacity requirement. For specification data, write for Bulletin 50-B-13.

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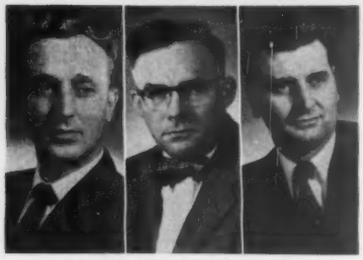
CANTON, MASS.



NEW APPOINTMENTS AT COLUMBIA CELLULOSE CO. have been announced by DR. MORRIS WAYMAN, Technical Director of the company, which operates a high alpha pulp mill at Prince Rupert, B.C. Left to right: DR. J. W. WILSON has been made Asst. Director of Research; M. E. MARTIN, one of the original members of the staff at Prince Rupert, is Asst. Director of Tech. Services (especially cellulose derivatives), and R. H. W. JAMES, specializing in regenerated cellulose, is given a similar title.

Column from Canada

ROBERT HERDMAN has been named to succeed **G. HOBBS** as resident engineer for Bowater's Newfoundland Pulp & Paper Mills, Ltd., at Corner Brook, Nfd. Mr. Hobbs has been promoted to mill manager. . . . ***HENRY CARTER*** *is the* senior electrical engineer, **KARL BULINS** *senior design engineer and* **F. HUBERT CLARK** paper mill engineer, the latter also serving as consultant to Bowater Power Co. . . . **SAM MANN** has been appointed controller for Bowater Corp. of North America, with headquarters in Montreal. **F. D. BURSEY** *is* assistant treasurer and assistant secretary. . . .

W. C. LeBOUTILLIER, *former mill* manager at Riberbend for Price Bros. & *Co., Que., has been named manager of* the company's Kenogami mill and has *been succeeded at Riverbend by* **H. H. SHEARS,** former assistant manager, who *in turn has been succeeded by* **U. A. SHANE,** who was sulfite supt. at Riverbend. . . . **J. LeROBERGE,** former assistant sulfite supt., replaces Mr. Shane. . . .

R. S. WELSH, who was engineer with St. Regis Paper Co., has moved to Hinton, Alta., to join the staff of North Western Power & Paper Co., in which St. Regis is a partner. . . .

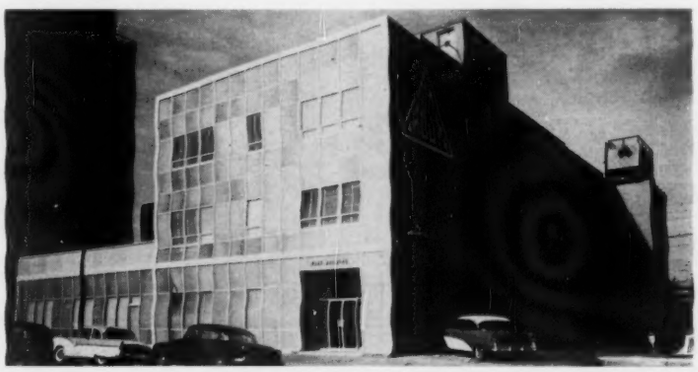
L. W. DUNPHY, former general supt. at Anglo-Canadian Development Co., has been appointed production manager and replaced in his former job by **C. R. TITTEMORE,** who was assistant general supt. . . . **A. R. LEGER** takes over Mr. Tittemore's former position, and **GEORGE CHINN** steps up to control supt. . . .

H. J. BARTON, who was with New Brunswick International Paper Co. at Dalhousie, N.B., has moved to Gatineau, Que., as a member of Canadian International Paper Co's staff. . . . **F. A. TAYLOR** has been made resident engineer with the research division of Alaska Pine & Cellulose. . . .

L. G. HARRIS, manager Harmac pulp division, MacMillan & Bloedel; **RUSSELL COOPER,** vice pres. and resident manager, Powell River Co., and **DR. J. B. KEAYS,** supt. of research at Powell River, have returned from a tour of United Kingdom mills. . . . **WILLIAM A. KRASKE,** who was formerly with the technical development department of Celanese Corp., New York, has joined the subsidiary Canadian Chemical & Cellulose office in Vancouver.

D. R. BAKEWELL has been named general manager of C. D. Schultz & Co., foresters, engineers and consultants of Vancouver, B.C., and Seattle, and **P. J. HALL** has been named operations manager. **C. R. MATHESON** is development manager and **A. I. W. MACKENZIE** is business manager. All four are graduates of the University of British Columbia.

GRAHAM HYLAND, technical personnel assistant to the managing director, U.K. Reed Paper Group, who was formerly with Alaska Pine & Cellulose Co. in British Columbia and Tasman Pulp & Paper Co. in New Zealand, is taking a course at the Institute of Paper Chemistry, Appleton, the first British chemist to be enrolled.



New Engineering Office in South

With completion of their new $400,000 three-story office building in Birmingham, Ala., The Rust Engineering Co. now has an engineering drawing room that is largest of its kind in the South. All Rust's southern operations will be housed in these new quarters, centrally located in business district of Birmingham with a parking area adjacent.

The modern exterior—especially smart aluminum, glass, and enamel front of the building—gives the appearance of a completely new structure. Actually, remodeling was done on an old building to save time and expense.

The building contains over 30,000 sq. ft. floor space for 220 people. The drawing room houses 150 men.

HEADING NEW HERBERT MALARKEY PAPER CO. which recently inaugurated production on one machine at new Portland, Ore. (l to r): Owner HERBERT MALARKEY and Sales Mgr. FRED C. INKSTER.

A New Paperboard Mill Starts Upon Oregon

A new paperboard mill started up in December at Portland, Ore. with one machine. This organization, Herbert Malarkey Paper Co.—owned by Herbert Malarkey, former president of M&M Wood Working Co. and son of its founder—is to start up a second machine within a few months and will then have capacity of 80 tons per day. Production is from waste paper and kraft screenings pulp.

The original 44 in. machine, formerly owned by Eastman Kodak Co., currently makes chipboard and corrugating medium. With start-up of No. 2—a cylinder board machine of 85-in. trim—production on No. 1 will be changed to high grade manila coating and white patent coated custom manufactured to order, according to Sales Mgr. Fred C. Inkster, who had retired as sales manager of Blake, Moffitt & Towne.

Fred Sievers, who retired from Crown Zellerbach Corp. as groundwood superintendent, did the engineering for the new plant. George Quigg is operations superintendent.

Joins Perkins-Goodwin Co.; New Supt. at Covington

ROBERT M. VAN SANT (left) has joined Pulp Sales Dept. of Perkins-Goodwin Co. and will cover New England area. He was formerly with Elof Hansson, Inc. GILBERT C. ROBINSON (right), former Director of Experimental Pulp Mill at West Virginia Pulp and Paper Co.'s Covington, Va. mill, has been promoted to Pulp Mill Supt. at its Williamburg, Pa. mill. He's a '51 grad of Rensselaer Polytechnic Institute in chemical engineering.

COCHRANE . . . FIRST IN WATER CONDITIONING

THE PERFORMANCE RECORD *Speaks* FOR ITSELF!

Cochrane CBA Condensate Drainage Control Pump

There are hundreds of case histories to prove the amazing benefits Process Industries derive from the Cochrane C-B System. The effectiveness of this system for improving heat transfer from steam is almost unbelievable!

For example:

- Unit installed on a paper machine saves 20 tons of coal a day while increasing machine drum surface temperature from 260° F to 310° F!
- Canner increased production of jacketed kettles 50%!
- Candy manufacturer doubled its plant production!
- Corrugating plant increased output of double-wall board 61%!
- Recovery plant eliminated the need for one of its two boilers!
- Chemical plant increased drying speed of drum dryer 44% with no wet spots, while increasing boiler capacity and saving $200 a month on fuel!

The Cochrane C-B System assures fast, uniform heat transfer. Condensate can be returned to boiler or make-up system at process temperature, resulting in higher efficiency, increased production and lower steam costs.

For complete details, write today for Publication 6025.

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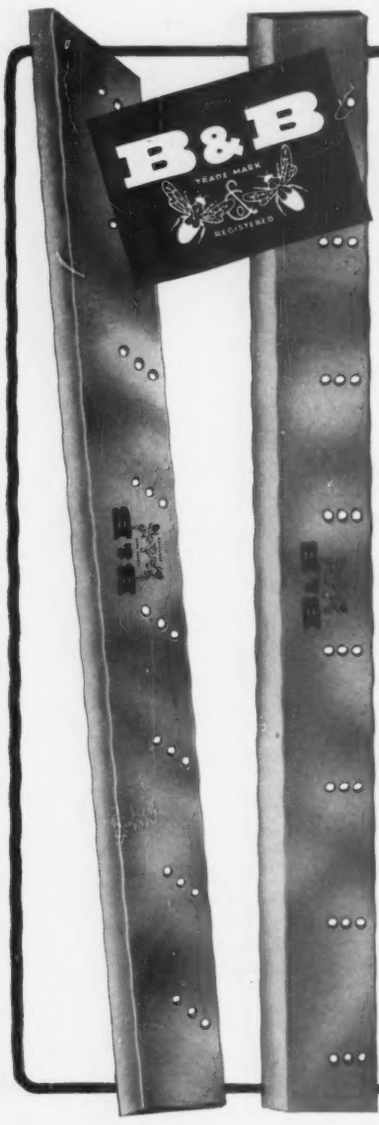
PULP & PAPER Chemicals Column

"The pulp and paper industry is a cellulose clothesline on which many chemicals are hung"

MORE SODIUM SULFATE AND SALT CAKE. . . . Representatives of the pulp and paper and glass industries of the Pacific coast were guests at a recent tour of West End Chemical Co.'s plant at Westend, Calif., which is to produce in excess of 100,000 tons of sodium sulfate and salt cake annually for national markets. The group, flown by chartered DC-3 airliner from San Francisco to Inyokern, was also shown historical sites in the desert and West End's new limestone quarry.

HYDROGEN PEROXIDE BY A NEW PROCESS is now being produced by Solvay Process Div., Allied Chemical & Dye Corp. It involves a chemical oxidation reaction and is, says the company, the most advanced and efficient process developed to date and involves catalytic hydrogenation and subsequent oxidation of complex organic materials. Results: combining of by-products hydrogen from Solvay's adjacent electrolytic chlorine cells, with oxygen from air to produce hydrogen peroxide. Solvay's new hydrogen peroxide plant is at Syracuse, N. Y. Incidentally some 18% of all hydrogen peroxide produced in U.S. is used for pulp and paper. From 1,120 tons in 1914, production is estimated to have risen to somewhere around 21,500 tons in 1955.



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B&B Paper Knives have these outstanding characteristics:

Careful selection of the steel.

Superior quality of edge and finish —

And — most important — they do a good job of paper cutting and stand up well.

That's why so many users specify B&B.

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B & B DIVISION

LODDING ENGINEERING CORP.

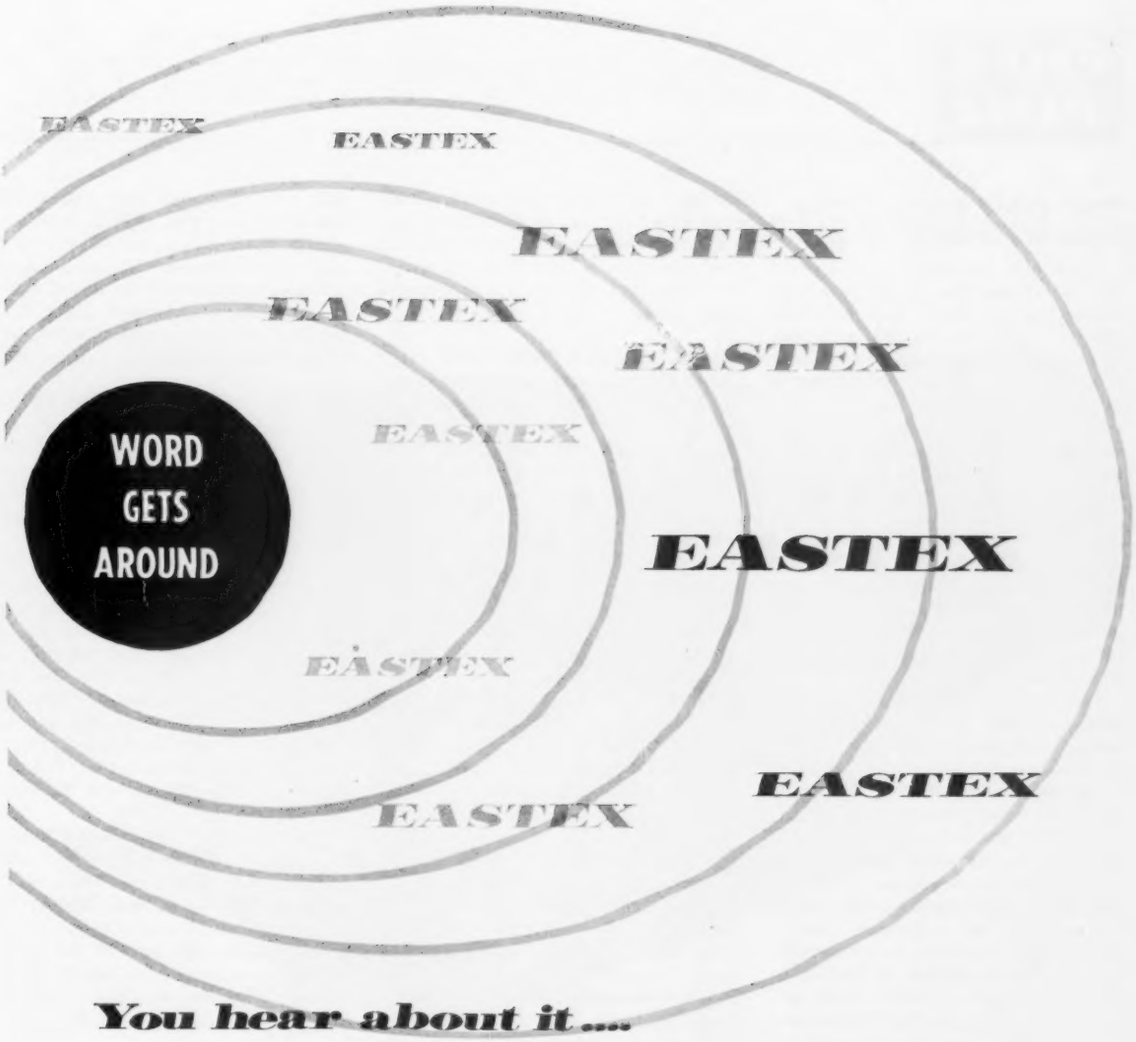
UNION • NEW HAMPSHIRE

LATEX FOR PAPER COATINGS is detailed in a new bulletin on the properties of a new styrene-butadiene copolymer latex for use in coating of printing papers by the Chemical Div., Koppers Co., Inc., called Dylex Latex K-52. Some advantages: ease of calendering; high gloss, printability, high bond of coating to paper stock; smoothness, excellent wet rub resistance, good light stability. Bulletin C--6-239T discusses physical properties, mechanical strength, recommendations for machine and off machine coating, etc. Write to Chemical Div., Koppers Co., Inc., Koppers Bldg., Pittsburgh, Pa.

POLYETHYLENE PROCESSING TIPS are in a handy file folder prepared by U.S. Industrial Chemical Division of National Distillers Products Corp., 99 Park Ave., New York 16, N.Y. Questions answered: What operating conditions give best results with various types of polyethylene resins on the market; what types of polyethylene resins are available from U.S.I. and what properties do they have and what services does U.S.I. offer the polyethylene processor.

"MERGER" OF OFFICES . . . All the divisions of Allied Chemical & Dye Corp. have been brought together in Chicago in Suite 430 Merchandise Mart. These are the National Aniline, General Chemical, Solvay, Nitrogen and Barrett divisions.

DESCRIBES CHLORINE EVAPORATOR . . . Fischer & Porter Co., Hatboro, Pa., has published a new catalog describing the company's chlorine evaporator. The new unit has a maximum capacity of 6,000 lbs. of chlorine per day. Copies of the new Catalog 70-21 are available on request from Fischer & Porter Co., 889 Jacksonville Road, Hatboro, Pa.



You hear about it....

when a product, or group of products, meets and surpasses the highest standards of your trade.

Eastex pulp, board and paper have gained industry-wide acceptance . . . in record time. In the beginning, this young mill set its standards high to serve an industry which puts a premium on quality.

It's no wonder acceptance has been so universal. Eastex management and supervisory personnel were drawn from the nation's most experienced pulp and paper specialists. This leadership—coupled with the latest, most modern production facilities—has enabled East Texas Pulp & Paper Company to gain an enviable reputation with a superior product . . . second to none.

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Telephone EVergreen 5-3711

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Telephone OXford 7-2980

WESTERN SALES OFFICE
1003 Builders Bldg., Chicago, Ill.
Telephone RAndolph 6-1068

PULP & PAPER

NEW INDUSTRY SERVICES

Heard About Leather Suction Boxes and Doctor Blades?

Three mills report successful application of Robalit, trade name for leather suction box and doctor blade materials, which have been impregnated with plastic materials and put together in plies to produce blocks of an essentially solid nature of various thicknesses, widths and lengths. It has been available to European papermakers for years, is now making its debut in America. Manufacturer is Joseph Poeschl's Sons of Rohrbach, Austria, and Orton Corp. has been appointed as exclusive sales agents for the pulp and paper industry in the U.S. and will appoint sales representatives in the Southern, Midwestern and Pacific Coast areas. Milton J. Maguire of Portland, Oregon, is now handling sales on the West Coast.

Sam Orton of Orton Corp. said that Robalit, because of its combination of leather and plastic impregnants, has characteristics which make it outstanding for use as suction box tops, wet doctor blades, forming boards and deflector blades. This combination of material has, when wet, an extremely low coefficient of friction so that it does not wear other parts of the paper machine with which it is in contact and, at the same time, is not rapidly worn itself. In conjunction with this low coefficient of friction, it also has a softness of texture which permits it to conform very closely to the surface of a roll or Fourdrinier wire without scratching or other objectionable characteristics.

OPENS SHOP IN ATLANTA . . . An instrument service shop in Atlanta for the convenience of industrial instrument users in the Southeast has been announced by The Foxboro Co. It will handle emergency repairs on Foxboro instruments and serve as a parts and supplies depot, speeding delivery of replacement parts, instrument charts, etc. Facilities for repair of temperature instruments will be added in the near future.

The shop, at 3232 Roswell Rd., near Foxboro's Atlanta branch office, will serve instrument users from Mississippi, to North Carolina, and parts of Tennessee.

Maynard S. Batchelder, Foxboro's Atlanta office service engineer, has been appointed shop manager.

NEW NAME FOR DEZURIK . . . DeZurik Shower Co. has changed its name to DeZurik Corp. It celebrates its 25th Anniversary this new year and will place into operation several substantial new additions to its plant at Sartell, Minn. The papermill shower is no longer indicative of the company's activities, which are principally in consistency regulators and an eccentric-type, non-lubricated plug valve.

MAJOR NICKEL-PRODUCING OPERATION . . . Plans for development over the next three to four years of a $175,000,000 nickel project in the Mystery-Moak Lakes area in Northern Manitoba are announced by International Nickel Co. of Canada, Ltd. Simultaneously with this announcement, Inco announced that in order to deal with higher costs and facilitate maximum production it is increasing the price of refined nickel by 9½ cents (U.S.) per lb. Similar increases were announced by the U. S. subsidiary, The International Nickel Co., Inc.

B-C COMBINES BEATER AND JORDAN FILLING . . . All beater fillings formerly manufactured and supplied by the Dilts Division of The Black-Clawson Co. will now be handled by the Shartle Division.

A PNEUMATIC UNLOADER, Portaflow, is being produced by Sprout, Waldron & Co., Inc., at Muncy, Pa. Features: Attaches to outlet of airslide cars; conveys starch, clay, synthetic resins, etc.; has all-weather, portable, aluminum frame and boasts of variable speed drive for mechanical adjustment in feed rate.

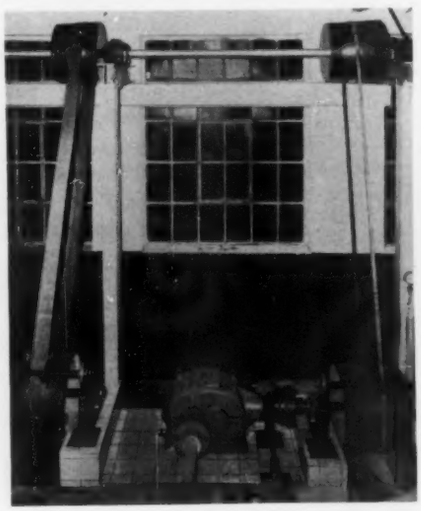
CONSTANT TENSION, AUTOMATIC EDGE GUIDE unwind stand is being introduced by Paper Converting Machine Co., Green Bay, Wis. Features: an Askania automatic edge guide, handles web widths up to 52-in. and roll diameters up to 52-in. Parent roll has an Aero-Shaft support, which locks the roll to the brake through air-pressure locks. New machine also has a water cooled, air-loaded brake controlled by a dancer roll.

HORIZONTAL WOOD CHIP FEEDERS are featured in Bulletin F-6 by the Fuller Co. Features: trouble-free chip conveying with no evident chip breaking or bruising. The unit is designed for positive feeding of chips to a pressure-type pneumatic conveying system.

ZEOLITE SOFTENERS are explained in a new Cochrane bulletin dealing with the necessity for water softening, fundamentals of softening and selection of equipment and zeolites. Also describd is the Cochrane Hydromatic valve for manual or automatic control of the cycling of the process. Ask for publication 4520 from Cochrane Corp., 17th St., below Allegheny, Philadelphia 32, Pa.

ALL ABOUT CENTRI-CLEANERS is in bulletin P-18 of Bauer Bros. Co., 1706 Sheridan Ave., Springfield, Ohio, which explains principles of stock delivery direct from Centri-Cleaners to paper machine headbox. Hundreds of similar installations are in operation, reports Bauer. Primary objective: to clean paper but there are other benefits, says Bauer.

NEW DESIGNS ARE INCORPORATED IN HEADBOX recently shipped by Dominion Engineering Co., Ltd., to Powell River Co., Ltd. Features: new cross-flow



MAKES U. S. DEBUT. Extremultus industrial belting, a standard in European paper mills, is being tested in U.S. mills. One chief engineer told PULP & PAPER he was very much in favor of it and mills he had called on it were very enthusiastic. Compare size of Extremultus belt on right with standard one on right. This installation is in a German mill.

the first
hydraulically-regulated differential gear drive

After years of intensive research, development and testing, Black-Clawson has developed a superior paper machine drive that provides:

Precise synchronous speed regulation

Accurate draw adjustment

These important operating characteristics are obtained through a unique hydraulic-motor differential-cage drive and a hydraulic tachometer-motor feedback-control arrangement.

Other significant operating features of the new Black-Clawson drive are:

Machine sections can be inched *or reversed* with line shaft running or *dead*.

No helper motors or inching motors required—no belts or chain drives are used.

Durability, ease of control and flexibility never before available are built into this compact differential gear drive unit.

Write for descriptive bulletin 10-PMB which gives the full story on design and operating characteristics.

The Black-Clawson Company

Paper Machine Division • Watertown, N. Y.

In Canada: Black-Clawson (Canada) Ltd., Montreal, P. Q.

distributor, a domed head and stainless steel interior with a Bell-Irving & Sandwell type slice. These design features will enable Powell's new No. 9 machine, a 262-in. wire newsprint machine, to operate in excess of today's high speeds and yet produce a compact design with a low height above the wire and short overall length in machine direction.

MECHANICAL BRAKEMAN PLATES, developed by Signode Steel Strapping Co., make possible use of controlled floating loads in box cars with nailable steel flooring. Used with heavy duty steel strapping and nailed to the floor in pairs, they dissipate shocks which would otherwise be transmitted to the load. Forward and backward movements caused by impacts and creeping caused by vibration of the car are minimized.

DRAW SPEED ON PAPER MACHINES is measured and continuously recorded by a new electronic system now being produced by The Bristol Co., using a Dynamaster recorder which receives signals from two tachometer generators. Draw-speed record, or arithmetical difference between paper speed over first press roll and the couch roll, is used at start-up and after breaks to adjust the draw to its proper value. How it works: a tachometer generator on the couch roll sends its signal to the Dynamaster tachometer recorder where it is subtracted from the signal being sent by a second generator at the press roll. Difference between two signals is then recorded. A three-way manual switch on the recorder allows the speed of either of the rolls to be recorded separately.

LEAD FIRM BECOMES SOLE OWNER . . . The Bunker Hill Co. has acquired the Associated Lead and Zinc Co., Seattle, Wash., a company it formerly owned jointly with Eagle-Picher Co. of Cincinnati. Associated will become the chemical products division of Bunker Hill.

FULL INFORMATION ON A-C MOTORS for specific applications are in a new Bulletin B-2103-1 issued by Reliance Electric & Engineering Co. Included: speed-frequency relationship, NEMA design classes, torque characteristics, NEMA current and torque values, frame selection tables and dimension charts and mechanical modifications for all frame sizes from 182 to 6085. Ask Reliance for their Motor Selector at 1088 Ivanhoe Road, Cleveland 10, Ohio.

BIRD SALE MGR. . . . Alex Jenkins has been appointed sales manager for pulp and paper machinery at Bird Machine Co., South Walpole, Mass. He was previously in charge of sales for the eastern territory and has been with the company's sales engineering staff since 1947. Mr. Jenkins graduated from Northeastern Univ., was for many years with Hollingsworth & Whitney Co., eight years as purchasing agent.

BLACK-CLAWSON MAN APPOINTED . . . Appointment of Adam P. Bridge to sales engineer, representing Black-Clawson's Shartle Division line of stock preparation equipment to mills in Ohio and Western New York and Pennsylvania, has been announced by Shartle sales manager Don Montville. Joining Black-Clawson in 1947, with eight years of practical papermaking experience gained at Maxwell Paper Co., Div. of Howard Paper Mills, Inc., Mr. Bridge has worked in various capacities at the Shartle Division.

HANDLING AND STORAGE OF HYDROGEN PEROXIDE is described in a new Solvay book. Details on new equipment and simplified handling methods for storing bulk quantities of hydrogen peroxide are given. Drawings include equipment and typical air and gravity transfer systems. Available Advertising and Sales Promotion Dept., Solvay Process Div., Allied Chemical & Dye Corp., 61 Broadway, New York 6.

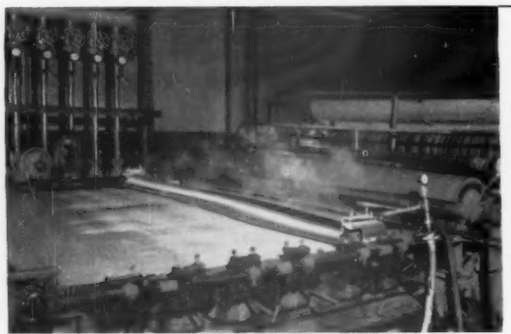
Heads Dilts Division, Purchases for UB-Camp

ROBERT J. JACOBS (left), former Mgr. of Sales and Engineering of Black-Clawson Co., Dilts Div., Fulton, N. Y., has been appointed Gen. Mgr. of the division, succeeding Robert F. Vokes who recently became Administrative Vice Pres. Mr. Jacobs joined Dilts in 1949 as a Field Rep and was promoted to Sales Mgr. the following year. ROBERT W. MORSE (right) is new Director of Purchases for Union Bag-Camp Paper Corp. A 1939 Dartmouth grad, Mr. Morse also attended Tuck School of Business Administration, served in the Navy, and was with Great Lakes Carbon Co. He has just concluded a 4-year term as Mayor of Easton, Pa.

PAPERMAKING RESEARCH LAB. John W. Bolton & Sons, Inc., is building a new Pulp & Paper Research Center in Lawrence, Mass., dedicated to research in papermaking fibers and processes. President John Gaines Bolton says the new laboratory will help Bolton-Emerson expand its products and services in anticipation of accelerated demands for papermaking equipment and improved pulp refining techniques. Accumulated data on machine building, metallurgy and pulp processing will also be utilized toward new technical progress in the pulp and paper industry.

HOT LIME-ZEOLITE SOFTENERS are described in Cochrane Corp's. publication 4801-A. It tells about method of operation, expected results, chemical savings and simplicity of operation. With addition of the zeolite stage, the application of Hot Process to water conditioning is practically limitless, it is said. Copies available from the company, 17th Street below Allegheny Ave., Philadelphia 32, Pa.

INEXPENSIVE FLOW RATE INDICATOR for use with Fischer & Porter's turbine type primary metering elements has been developed. Called an Industrial Logarithmic Panel Indicator, it converts the output signal of the turbine meter into a series of pulses of constant ampli-



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Paper Production
with
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DRIPLESS STEAM
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THUS FREEING WET MAT

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tude at a frequency equal to that of the turbine meter output and, therefore, proportional to volumetric flow rate. Ask for catalog 11808, from Fischer & Porter Co., 808 Jacksonville Rd., Hatboro, Pa.

MOVIE ON FELT PERFORMANCE. Albany Felt Co. has made a full color sound movie slide film picturing various felt applications on different types of paper machines. Major subjects: installation of new felts, washing procedures, conditioning devices, and general care and operation of paper machine felts for maximum efficiency. For arrangements to see this film, write James E. Smith, sales manager, Albany Felt Co., Albany, N.Y.

HANDLING LIQUID AND GASEOUS CHLORINE? Well, Wallace & Tiernan Inc., 25 Main Street, Belleville 9, N.J., has new bulletins featuring Liquid Chlorine Evaporators, valves and fittings for chlorine liquid and gas supply lines, manual and pilot operated chlorine pressure reducing valves, and chlorine gas metering equipment.

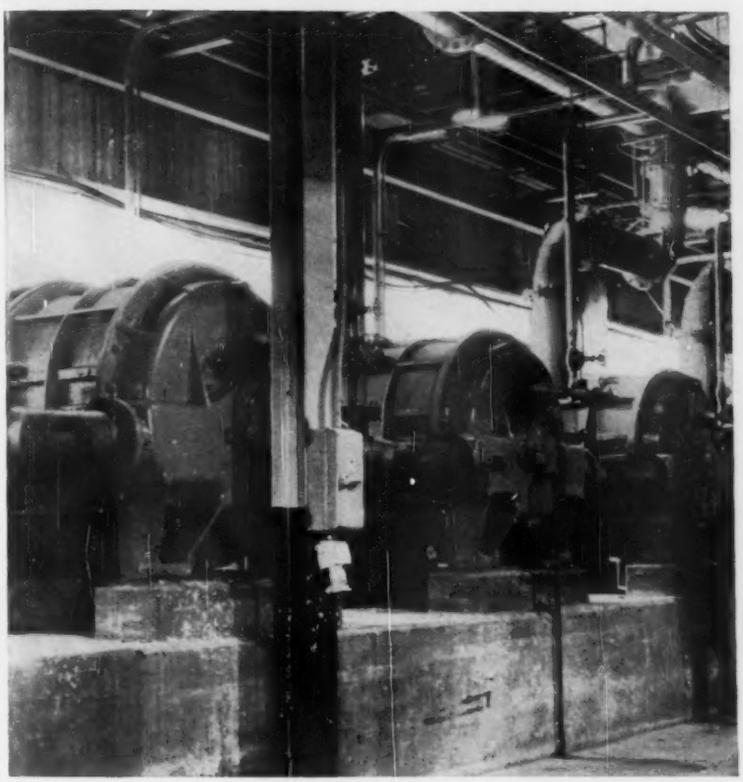
DIRECT CURRENT MOTORS and MOTOR GENERATOR SETS are described in a new bulletin by Allis-Chalmers Mfg. Co. (bulletin 53B8424). It covers shunt and stabilized shunt wound, compound wound and series wound motors in 8 different enclosures plus a matching line of motor-generator sets for reliable conversion of ac to dc.

COMPUTATION ELIMINATOR. A new way to specify proper thickness for pipe insulation is told in a new catalog by Union Asbestos & Rubber Co. (Unarco). It is based on the "J" factor; a special index which eliminates much of the complicated computation formerly needed to determine economical thicknesses. Detailed drawings also show how single-layer Unibestos is applied to various vertical and horizontal expansion joints as well as to pipe bends, flanges, valves and fittings. Copies available from 1111 West Perry St., Bloomington, Ill.

NEW DIRECT DRIVE SAW. McCulloch Motors Corp., Los Angeles, has announced a new direct drive chain saw for the pulpwood industry. The McCulloch D-44 is said to be the most powerful of all lightweight direct drive chain saws, with extra power and "lugging" ability, and to be operated for many hours with minimum fatigue. Price is from $238 up, depending on blade length; blades are available in 12, 18, 24 and 30 in. sizes.

DWIGHT RICHARDS has been appointed asst. director, Filtration Technical Div., Dorr-Oliver, Inc., located at Oakland, Calif.

What, actually, do Vacuum Pumps on paper machines handle?



Paper mill engineers know that it is actually a mixture of air and water vapor, but the custom of rating vacuum pumps in terms of air capacity alone causes this important fact to be frequently overlooked.

The presence of this water vapor causes a considerable reduction of the effective air handling capacity of any vacuum pump except the Nash. In the Nash Vacuum Pump the bulk of this water vapor is effectively condensed, due to the Nash operating principle. The air handling capacity of the Nash is therefore not reduced.

That is one of the reasons why Nash Vacuum Pumps are standard in over a thousand leading Paper Mills.

NASH ENGINEERING COMPANY

443 WILSON ROAD, SO. NORWALK, CONN.

Pacific Coast Mills Form New Association

Sixteen pulp and paper companies with 28 mills in Washington and Oregon have formed a permanent research and educational organization—Northwest Pulp and Paper Association.

The new group will publicize pulp and paper's growing economic and social importance in the Northwest, sponsor air and water research projects, coordinate and fully utilize the industry's research and engineering developments in air and water pollution abatement, and publish results.

Howard W. Morgan, vice president and manager of Weyerhaeuser Timber Company's pulp division, is president of the association; R. S. Wertheimer, v.p. and manager, Longview Fibre Co., is vice president; and Lawson P. Turcotte, president of Puget Sound Pulp & Timber Co., is secretary-treasurer.

Headquarters will be in the Washington Bldg., Tacoma, Wash. Vinton W. Bacon, for the past six years executive officer of the California State Water Pollution Control Board, is executive secretary of the Northwest Pulp and Paper Association. A Univ. of California graduate in civil and sanitary engineering, Mr. Bacon last month was honored by the American Society of Civil Engineers for administration of the water research program of California's Water Pollution Control Board.

HOWARD W. MORGAN (left), Vice Pres., Weyerhaeuser Timber Co., is President of new research and education organization, Northwest Pulp and Paper Assn. VINTON W. BACON (right), formerly Executive Officer of California State Water Pollution Board is Executive Secretary of new group.

"This association effort," Mr. Morgan pointed out, "will be in addition to activities of individual manufacturers. Northwest companies spend millions of dollars each year to improve water and air conditions. The association intends to cooperate with other research organizations and government agencies."

Pulp and paper adds more than one-third of a billion dollars to the economy of the two northwest states each year. Washington leads the nation in pulp production and Oregon is a fast-climbing tenth.

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Tennessee's liquid Sulfur Dioxide is a most efficient and economical antichlor. Removes residual chlorine and other materials which cause color reversion or yellowing with age. It also eliminates excessive residual chlorine in water.
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We would like to consult with you on the possibilities of Tennessee's Liquid Sulfur Dioxide in your processing.
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New Titles and Promotions

HARRY C. MOORE (top left), President of Beloit Iron Works, recently announced appointments of E. D. Beachler (top right) as Vice President, Engineering; A. A. NEESE (lower left) as Vice President and Secretary; and E. H. NEESE JR. (lower right), Treasurer and Asst. to President (Coordinating Scheduling, Production, Subcontracting, Engineering and Purchasing). PULP & PAPER previously announced naming of D. R. SIMONDS as Vice President, Sales.

Griffith Mills Buy Chemical-Proof

A major expansion which includes purchase of a Seattle firm and substantial increase in Portland, Ore., production facilities is announced by Zina A. Wise, president of Griffith Rubber Mills. This makes the Portland firm one of the largest independently owned rubber mills on the West Coast.

Arrangements were completed for purchase of the Chemical-Proof Corp., Seattle which will continue operation as a subsidiary. In addition, installation of $50,000 in new equipment is now underway in an addition to Griffith Rubber Mills.

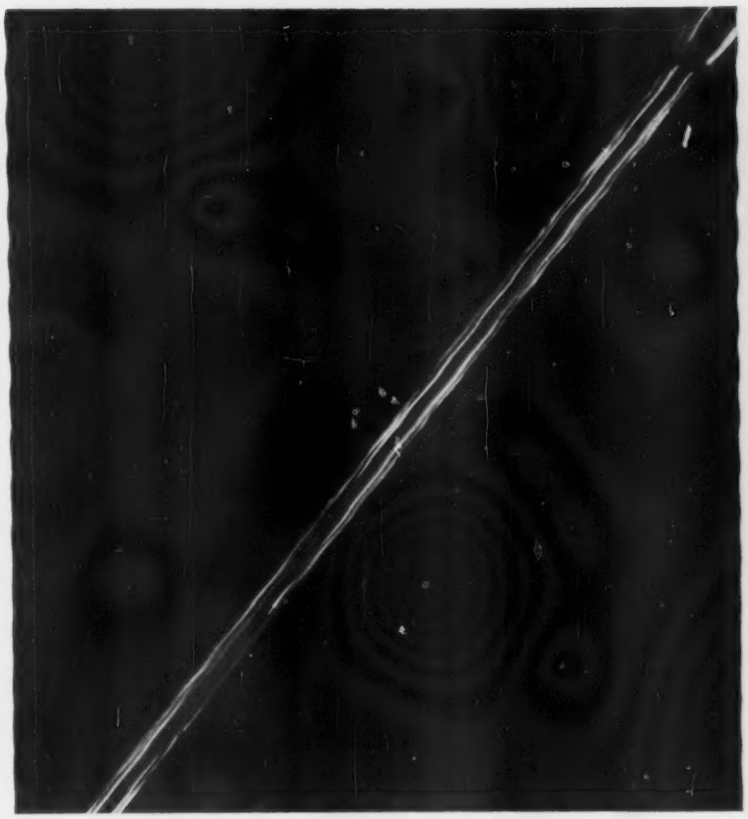
Chemical-Proof Corp. was founded 11 years ago by Raymond C. Hill. He now retires as president. Norman J. Johnson, executive v.p. and gen. mgr., of Griffith Rubber Mills in Portland, has been named executive v.p. and gen. mgr. of the subsidiary firm. George C. Houghton, vice president for sales for Chemical-Proof, has been appointed resident manager of the subsidiary.

Chemical-Proof applies various types of protective coatings such as rubber, neoprene, epoxy resins, polyvinyl chlorides, phenolics and plastic fabrications. Plans are to extend this operation to the Portland plant.

New equipment in Portland includes sandblasting machinery, roll balancing machine, second large suction roll drilling machine, and an additional large lathe for processing large rubber covered rolls.

Elected V.P. of Panellit; Heads Simpson Sales-Service

MILLARD D. SHRIVER (left) has been elected Vice President in Charge of Sales, Panellit Inc., Skokie, Ill., designers and producers of engineered instrumentation systems. Mr. Shriver established for Republic Steel Co. one of the first instrumentation control systems used in the steel industry, and he first became widely known in pulp and paper mills when he was with the Bristol Co., of Waterbury, Conn. He joined Panellit in 1951. W. R. DENMAN, JR. (right), head of Quality Control Dept. of Simpson Paper Co., Everett, Wash., has been named to direct the company's new Sales-Service Dept., providing liaison between the mill and sales offices.



Using stop motion, photographer Bernard Hoffman 'freezes' a tiny jet of water. Discharged at high pressure, the stream is a solid, unwavering mass.

Controlling Pressure in Fluid Engineering

Pressure is always a problem . . . either how much you need, or what you can do in spite of it. Accurate control requires the relation of other factors, like volume, time, and resistance. To get these answers, you can depend on the engineering leadership of S. Morgan Smith.

Take butterfly valves. Parts for a wide range of standard R-S Butterfly Valves, capable of satisfying most processing requirements, are carried in stock for fast assembly and shipment. These R-S Valves, with their streamlined vanes, give you minimum pressure drop, save pumping power. Regulation and closure are quick, and you get uniform flow control through all positions in the normal regulating range.

To obtain full information on the complete SMS line—R-S Butterfly Valves, Rotovalves or Ball Valves—call our nearest representative. Or, write S. Morgan Smith Co., York, Pa., for data on standard valves or special applications.

SMS S. MORGAN SMITH HYDRODYNAMICS

AFFILIATE: S. MORGAN SMITH, CANADA, LIMITED, TORONTO

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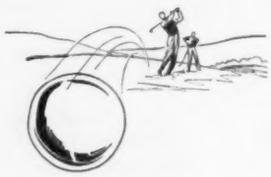
"We Stopped Corrosion at our Plant!"

"Corrosion was *rampant* inside and out before Truscon diagnosed our troubles and prescribed TRUSCON CHEMFAST, corrosion and chemical resistant coating with Devran (epoxy resin)."

• If you have *any* corrosion at your plant, stop it *now* before replacement costs eat gaping holes in your profits! Send coupon above—take advantage of Truscon experience and knowhow.

Chemfast is a heavy-duty coating for protecting indoor and outdoor surfaces of wood, metal and masonry against moisture, acids and alkalis. It owes its toughness to Devran (epoxy resin).



MADE WITH DEVRAN—
IT'S TOUGHER,
MORE RESILIENT
THAN A GOLF BALL.

CHOICE OF ATTRACTIVE, EYE-PLEASING COLORS

TRUSCON Laboratories
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Publishers' Paper Co. Honors Retirees

LOUIS SMITH (left), Supervisor of Printing Dept., who joined Hawley Pulp & Paper Co. in 1908 when it first organized at Oregon City, Ore., retires from successor firm Publishers' Paper Co. with 48 years service; FRANCES BARKER (middle) entered the industry at Pacific Mills and later came to Oregon City where she's been Chief Clerk of Logging-Timberlands Dept. for 10 years, retires from Publishers' after 26 years service; Vice Pres.-Mill Mgr. CARL E. BRAUN (right) presented pins.

Infilco Treatment Plant

A new demineralizer plant for Minnesota & Ontario Paper Co.'s high pressure boiler plant addition at International Falls, Minn., is being supplied by Infilco, Inc. The Infilco plant which treats boiler feed water is located in the filtration plant.

Speed Variator Packaged Drive Boosts Container Production

Use of a Speed Variator packaged drive has boosted production 100% and cut wastage almost to zero at Midland Container Corp., Racine, Wis.

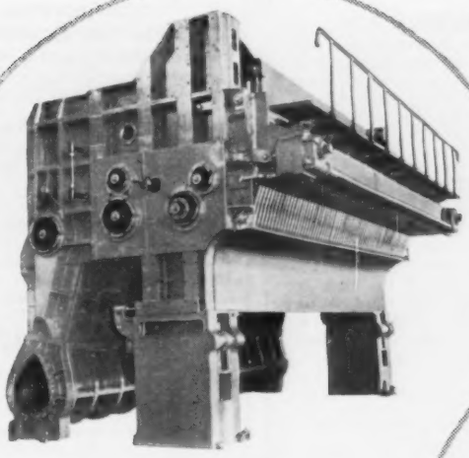
The General Electric Speed Variator is used to power and control the production of corrugated shipping containers ranging in size from 10 to 110 sq. in. The containers are delivered flat, slotted, and cut to specified dimensions.

Robert Petersen, plant superintendent, said the new unit replaces a mechanical drive system. "Formerly when we wanted to stop the machine," he said, "we would lose about 18 boxes while the conveyor came to a halt. Now we press a button and it stops immediately, and we have only one extra. In case of a jam it stops immediately. The operation is simplified. It can be revved up with a flick of the wrist." He said maintenance has been "negligible."

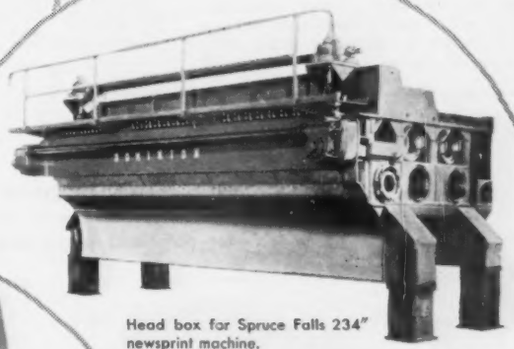
According to Oliver Gerlach, Midland president, the General Electric equipped printer-slotter gives neater, more accurate and sharper printing. It trims, slots and prints in two colors.

"DOMINION"

contributes to progressive improvements in Canadian paper making machinery



Dominion patented head box for Elk Falls 284" newsprint machine.



Head box for Spruce Falls 234" newsprint machine.

A head box for Howard Smith Paper Mills Crabtree Mill 96" Yankee Tissue Machine.

Three of the many new pressure type head boxes built and being built by Dominion Engineering— ensure controlled, uniform flow for paper machines regardless of stock, width or speed...

For further information, contact Dominion Engineering Company Limited, in Montreal, Toronto or Vancouver

DOMINION ENGINEERING
COMPANY LIMITED

STAMP OF APPROVAL—Canada pays tribute to its leading industry, pulp and paper, in this new 20¢ stamp. Pulp and paper leads all others for value of product exported and wages paid. Another stamp in secondary industry series depicts a roll of paper unwinding from a tree to frame a pulp and paper mill.

WANTED

Excellent opportunity for young man (30-40) with experience in cylinder machine operation, to train for position of Tour Boss in Midwest Boxboard Mill. All replies confidential. Write Box 286, PULP & PAPER, 370 Lexington, New York, N. Y.

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The high cost of living is daily shrinking retirement pensions. Even though your retirement may be some time in the future, nevertheless, now is the time to prepare for more comfortable days ahead. For details write Box 289, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

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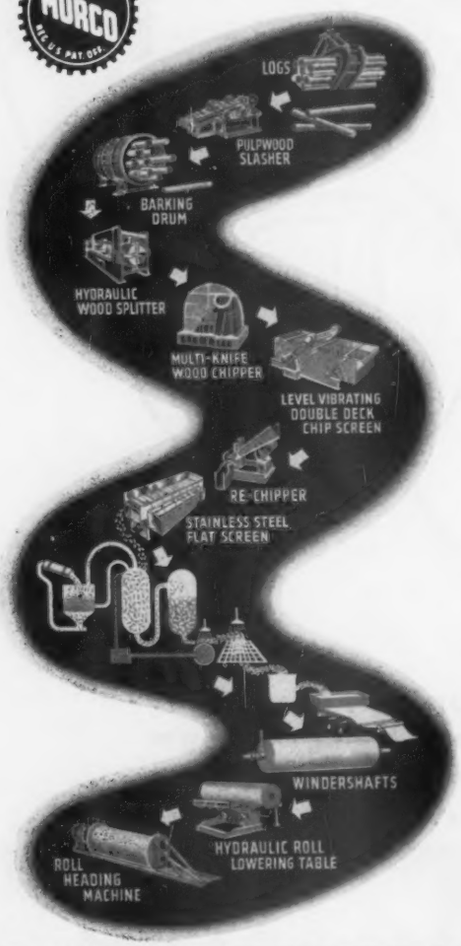

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- Knot Screens
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Due to our expansion program in the pulp, paper, and insulation industries, several excellent opportunities are available for individuals possessing degree in chemistry, chemical engineering and physics for permanent and responsible positions in our research laboratory located in the Upper Midwest. Salaries commensurate with background and experience.

Our employees know of these positions.

Your prompt reply giving a resume of your background and salary requirements will be held in confidence. Write Box 288, PULP & PAPER, 370 Lexington Ave., New York 17.

EXPERIENCED PULP AND PAPER MILL ELECTRICAL ENGINEER WANTED

For new 100 ton pulp and paper mill now under construction in Central America. Excellent opportunity for retiring engineer. Top salary—U. S. tax exempt. Pleasant healthy living conditions near beautiful large beach resort and American colony.

Please submit record of training and experience. Also please be sure to state salary desired and include telephone number in first reply. All replies held in strict confidence.

Write Box 284, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

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With up-to-date successful experience on high grade bond and book papers, for new one hundred ton mill now under construction. One hundred percent American equipment—special Rice-Barton fourdrinier paper machine.

Excellent opportunity for retiring top ranking paper maker. Salary U. S. tax exempt. Pleasant healthy living conditions near beautiful beach resort and American colony.

Please submit complete record of training, experience and achievement. Also please be sure to state salary desired and include telephone number in replying. All replies held in strict confidence. Write Box 285, PULP & PAPER, 370 Lexington Ave., New York, N. Y.

PAPER MEN

Whether you are an *employer* looking for the right man or an *applicant* looking for a better position, it will pay you to investigate our specialized placement service covering all phases of the Paper, Container and Packaging Industries.

- **PRODUCTION**
- **SALES**
- **MANAGEMENT**

A substantial number of exceptional men are now listed with us and are available almost immediately.

Whatever your requirements, contact us in complete confidence without involving any obligation.

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RESEARCH SUPERVISOR—PULPING & BLEACHING

We need a man to supervise our research projects in the fields of pulping and bleaching at our central research laboratory in International Falls, Minnesota. Applicants should have a degree or degrees in chemical engineering or chemistry with experience in this field. This opportunity is excellent for the man with good background and sincere interest in pulping research.

All replies will be kept confidential and should include personal data, educational, and work history together with salary thinking.

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Please send me free Stock Pump bulletins No. 234, No. 235 and No. 243. I understand they will help me select the pump best suited for my requirements.

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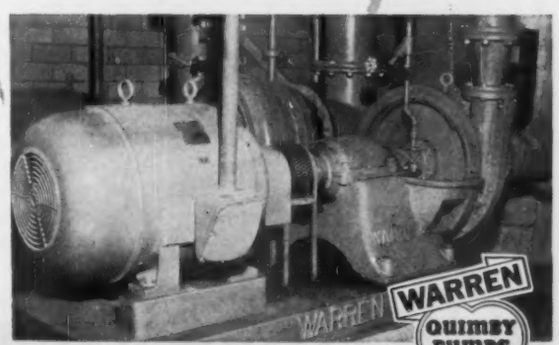
Bulletins Tell Why WARREN STOCK PUMPS Are Built to Fit Your Particular Needs

The important job of moving stock in a paper mill can be done most efficiently by pumps built for the specific job.

Hammermill Paper Company has relied on Warren engineering experience—and a variety of Warren Pumps—for nearly 20 years. One of their more recent problems involved moving hardwood stock from one operation to another in their new five-million-dollar Neutracel pulping and bleaching plant. After careful study and analysis the *right* pumps were furnished by *Warren*—and are now helping to produce fine quality pulp used in the manufacture of fine quality papers.

Warren Stock Pumps can be built to do *your* job. Write for detailed information—or use the above coupon.

SEND FOR YOUR FREE BULLETINS TODAY!

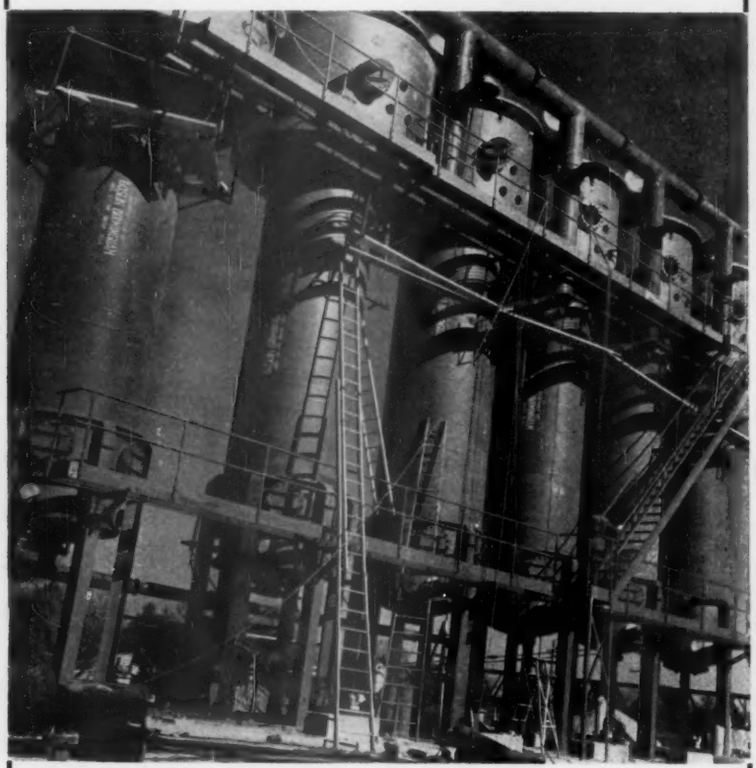


Typical of 75 Warren Pumps at the Hammermill Paper Co. are these two for hypo washer and hypo tower service.

PP-38

WARREN STEAM PUMP COMPANY, INC.
Warren, Massachusetts

G-B Know-How Meets the Challenge of a Growing Industry



Gulf States Paper Again Calls on Goslin-Birmingham

When Gulf States Paper Corporation began construction of their new mill at Demopolis, Alabama, they called on the engineering and fabrication experience of Goslin-Birmingham for this six-body, self-supporting black liquor evaporator. The Demopolis mill, expected to be in operation this summer, will turn out market pulp. This is the second Goslin-Birmingham evaporator installed by Gulf States Paper—a tribute to G-B's pulp industry know-how.

G-B Engineers are at your service any time to discuss your processing problems . . . without cost or obligation.

GB **GOSLIN-BIRMINGHAM MANUFACTURING CO., INC.**
BIRMINGHAM • ALABAMA

Pandia Appoints Three

Pandia Sales Manager, R. G. GOODWIN, announces appointment of three Sales Engineers added to the sales staff of Black-Clawson's Pandia Division. They are (left to right): DAVID F. MORTON, W. R. ZIMMERMAN and RAY H. CROSS.

Formerly Service Engineer for Cameron Division of Ingersoll Rand, Mr. Morton is a 1944 graduate of the U. S. Merchant Marine Academy, and has for five years covered pulp and paper mills in the South. Mr. Zimmerman, during the 1940's, worked on development of the Roberts Continuous Grinder, now a product of Pandia. For the past ten years he has been with Waterous Ltd.

A 1956 graduate of Univ. of Maine, Mr. Cross holds a b.s. in mech. engineering and a certificate for the five year pulp and paper management course. He gained mill experience with Hudson Pulp and Paper Co. at Augusta, Maine.

Join Sales Force

EARL R. PENNINGTON (left) former Project Engr., West Virginia Pulp and Paper Co., Charleston, S.C., and JOHN FORBES (middle), former Downingtown Mfg. Co., Sales Engr., have joined the sales staff of Black-Clawson Co. Shartle Div., Middletown, O., announces Don Montville, Shartle Sales Mgr. To provide increased service for Black-Clawson Dilts Div., DONALD A. WASHBURN (right) will serve in Midwest states as Exec. Sales Engr., representing Dilts in Wis., Minn., Ill., Mo. and western Ind. from his residence at 894 Grove St., Glencoe, Ill.

New West Coast Manager

ROY W. KELLER, for past three years West Coast Sales Engr. for F. C. Huyck & Sons, Rensselaer, N.Y., has been promoted to Dist. Mgr. for the West Coast. He has been associated with the industry since joining Crown Z in 1937.

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Want *more* reasons? Your Hamilton Felt Service Salesman will be happy to give them to you. He can also supply you with the proper Hamilton Felt of standard construction from more than 300 proven styles, or design a variation to solve *your* specific problem.

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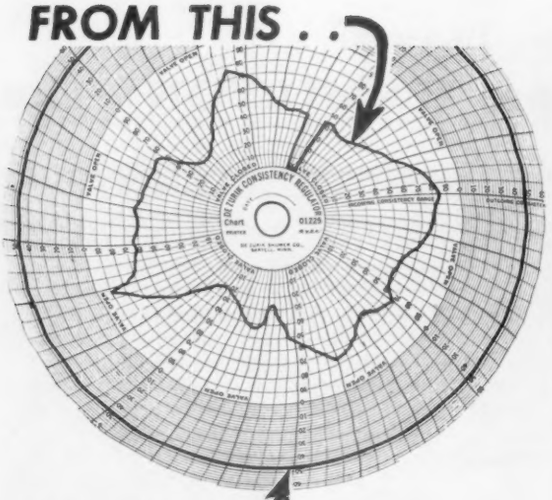
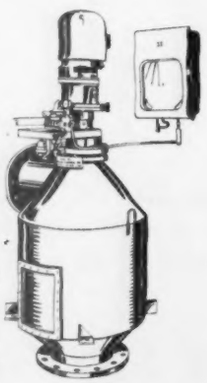


TO THIS

WITH THIS!



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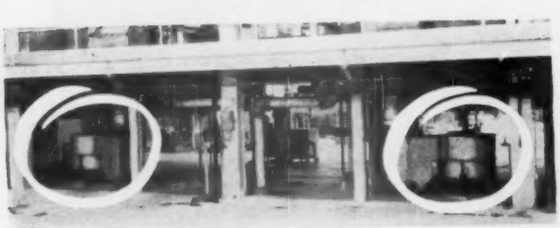

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PULP MILL OPENINGS

British Columbia Forest Products Limited has openings at its bleached kraft mill under construction at Crofton, on southern Vancouver Island.

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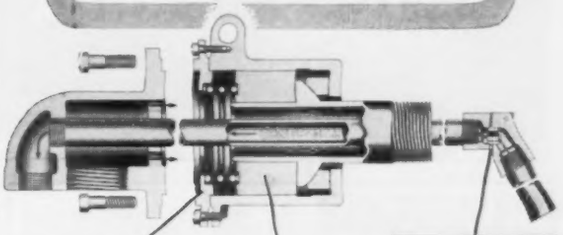
Tour Foremen: Applicants must have had experience in operating or technical supervision in a bleached kraft mill.

Reply in writing to:

J. L. Gallagher, Personnel Supervisor
Pulp Division
British Columbia Forest Products Limited
Crofton, B. C.

Johnson Joint

SELF-SUPPORTED TYPE
with SYPHON ELBOW



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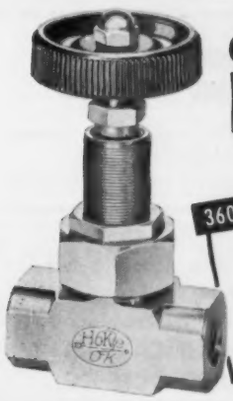
10 valves in 1



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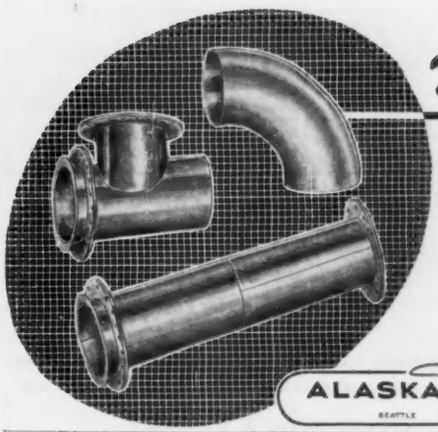

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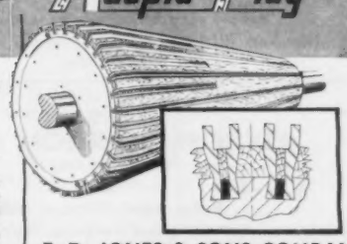

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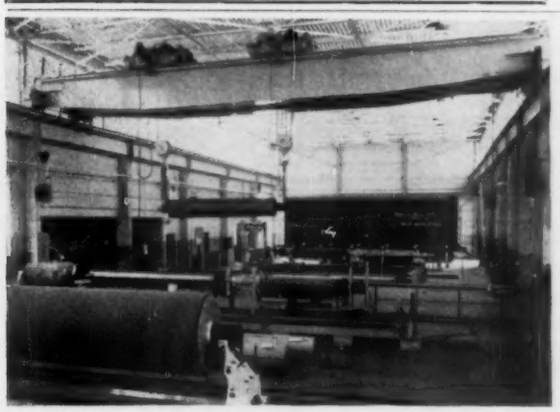

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The LAST WORD — PULP & PAPER EDITORS' PAGE

Good News for U.S. Book Mills

It is good news for the American manufacturers of book paper that the Canadian government is finding that its magazine tax is not proving at all good for Canada.

The Canadian government has found that this levy, which was strongly opposed by most publishers in Canada although supported by MacLean-Hunter, is proving a boomerang. The objective was to make the tax a restraint on U.S. magazines publishing Canadian editions without change in editorial content but with Canadian advertising.

The effect has been just the reverse of what the government had expected. Instead of discouraging the U.S. magazines such as Time and Reader's Digest, these publications have merely increased their rates in Canada with the result that some big corporations that wanted to stay in Time and Reader's Digest simply have less in their budget for Canadian magazines. One Canadian consumer magazine complains that it has lost four pages on this account at $4,000 each.

We'll bet that the first-class Canadian magazines will do all right, despite any developments in the American publishing field. We don't think magazines, either in the U.S.A. or Canada, have come anywhere near reaching the limits of their imaginative growth and popular appeal.

May Need Year-Around Colleges

President Douglas M. Knight of Lawrence College, who is also a trustee of the Institute of Paper Chemistry, seems to have put his finger on a practical way for the United States to solve the problems all higher schools will face when the post-World War II babies reach college age in another few years.

He suggests a 12-month operation for colleges and universities, although he says the idea is still being studied. In this way, our colleges and universities would be using their facilities and staff to full capacity.

There would be alternating enrollments of students, so each group would receive two full semesters of education in a year. All year around there would be full staff and complete curricula.

The problem of teacher shortages, now with us, would be more acute, and how this would be solved is not clear. Alternating vacations might be necessary. Maybe shorter vacations for teachers would be the answer.

Dr. Knight didn't get into the problem of staffing, according to the reports we read. But the old long summers of vacation might have to become a thing of the past.

Pulp and paper and other industries need more scientists and engineers. The student population bulge—when the war babies of the immediate postwar years come of college age—may help to solve these shortages if we meet it with modernized systems of teaching.

Have a Laugh On Our Contemporaries

We will admit we make mistakes, too. All publications do. So, with our own errors—may they be mighty few—in mind, we thought we might have fun pointing to some others.

The Savannah *News* predicted "warm days and wild nights." And the Springfield, O., *News* headlined "Miss America '56 and Golfer Mate on Honeymoon." San Francisco *Examiner* reports "Coed Jailed in Beer Case."

Topsy-Turvy Events in the South

Our editors in the South are in a position to really visualize the great industrial progress that is taking place in that part of the United States. There are many advantages that the South has, and one that is not often mentioned is the initial capital expense in plant structures. In the South, plants can be lightly constructed, or made of open type construction, which cuts costs.

In an interview recently with PULP & PAPER, here is how an officer of one of the South's oldest companies pictured in "poetry" what seemed to him a topsy-turvy turn of events:

"Cotton's going west;
"Cattle's going east;
'The Negro's moving North;
"The white man's moving South."

Cotton is moving west—even west of Texas now, they say. More cotton is grown in California, also in Mexico. And in the neighborhood of Georgia mills, you see fine specimens of cattle and you hear the Empire State of the South has ambitions to rival North Central states as cattle growers. The new Brahmin cattle breeds also are becoming more noticeable in the South.

Pulp and paper and chemicals are the industries to which the future of the South is closely tied.

On Getting Things Done

In business, as in all other activities of life, the rewards go to those who get things done. A study of the techniques of successful men quickly reveals the truth that the beginning is at once the most important, and frequently the most difficult part of the job. When facing up to a project, there is no advancement for the man who stands trembling because he cannot see the end from the beginning. Making a bold start, then, is often the thing . . . any start, to get the wheels in motion. Once this is achieved, it is frequently amazing to find how readily solutions to problems present themselves, and how quickly ideas occur and fit into place.

There are some business men and some authors, points out The Royal Bank of Canada Monthly Letter, who prefer people to think that they solve problems and write books by a sort of frenzy or intuition. The truth is, they continue, that behind every sound creative act, whether in business or in art or in everyday living, there is a history of crudities of thought, of dim and distantly seen ideas, of fully-matured fancies, frequently discarded in despair because they were found unmanageable—of acceptance, rejection, erasure and correction.

Research into the problem at hand is a vital phase. "The more extensive a man's knowledge of what has already been done, the greater will be his power of knowing what to do."

A useful rule of thumb, then, in getting things done is: 1) to evalulate the problem, 2) to survey the field, 3) to think freely in all possible related directions, 4) to decide on action, 5) make a start, and 6) stick to it until the job is finished—*The Fraser Voyageur.*

OUR BUSINESS IN LIFE, is not to get ahead of others, but to get ahead of ourselves—to break our own records, to outstrip our yesterdays by our today, to do our work with more force than ever before.—Samuel Johnson.

Chinese Rouge Box of the Ch'ien-lung Dynasty (1736-1795 A.D.). Made of blue and white porcelain, featuring the Yang-Yin symbol on the cover.

Courtesy of The Metropolitan Museum of Art, New York.

This symbol (Yang-Yin) represents T'ai-chi, the old Chinese *Ultimate Principle*, and as such, perfection. As the Asten-Hill trademark it symbolizes perfection in ASTEN DRYER FELTS for paper mills.

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